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or AWAKENED INDIA

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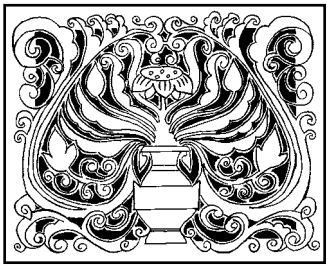

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Traditional Wisdom

उत्तिष्ठत जाग्रत प्राप्य वरान्निबोधत । *Arise! Awake! And stop not till the goal is reached!*

The Axes of the Earth

October 2007
Vol. 112, No. 10

इळायास्त्वा पदे वयं नाभा पृथिव्या अधि ।
जातवेदो नि धीमह्यग्ने हव्याय वोळ्हवे ॥

In Ila's place [the sacrificial altar] we set thee down, upon the central point of the earth, that, O Agni Jatavedas [the all-knowing Fire], you may bear our offerings to the gods. (Rig Veda, 3.29.4)

आहवनीयं सादयेत्पृथिव्यास्त्वा नाभौ सादयामीति मध्यं वै नाभिर्म्मध्यमभयं तस्मादाह पृथिव्यास्त्वा नाभौ सादयामीति ।

Saying, 'On the navel of the earth I place thee!' place the invocatory fire. The navel is the centre, and the centre is free from fear. Hence it is said, 'On the navel of the earth I place thee!' (*Shatapatha Brahmana*, 1.1.2.23)

काशी काञ्ची च मायाख्या त्वयोध्या द्वारवत्यपि ।
मथुरावन्तिका चैताः सप्तपुर्योऽत्र मोक्षदाः ॥

Kashi, Kanchipuram, and the one called Maya [Hardwar], as also Ayodhya and Dwaravati [Dwaraka], along with Mathura and Avantika—these seven are cities that give liberation here [on earth].

काशीक्षेत्रं शरीरं त्रिभुवनजननी व्यापिनी ज्ञानगङ्गा
भक्तिः श्रद्धा गयेयं निजगुरुचरणध्यानयोगः प्रयागः ।
विश्वेशोऽयं तुरीयः सकलजनमनःसाक्षिभूतोऽन्तरात्मा
देहे सर्वं मदीये यदि वसति पुनस्तीर्थमन्यत्किमस्ति॥

This body is the precincts of Kashi, with the pervasive Ganga of knowledge, the mother of the three worlds; devotion and faith are this Gaya, the yoga of meditation on the feet of one's guru is Prayaga; the transcendent Turiya, the Inner Controller that is the witness of all minds, is the Lord of the Universe—if all these are in my own body, what else is a *tirtha*?
(Shankaracharya, *Kashi Panchakam*, 5)

O centre of the compass! O inmost ground of truth! O pivot of necessity and contingency! O eye of the entire circle of existence! O point of the Quran and *Furqan*! You are the pole (*qutb*) of the most wondrous things. The sphere of perfection in its solitude turns on thee. (Abd al Karim Jili)

THIS MONTH

The living ancient cities of the world were thought of as the 'centre of the earth', 'the axis of the universe', or 'the pivot of the four quarters'. They embodied the cosmos and 'converted the energy of an entire civilization into culture'. In this number we take a look at some of these **Crucibles of Culture**.

Prabuddha Bharata—100 Years Ago presents Sister Nivedita's poem 'The Child Heart' and a selection from 'Swami Abhedananda's Address to the Students of Mysore'.

In looking back on his **Three Visits to Sikkim**, Srimat Swami Smarananandaji Maharaj, Vice President, Ramakrishna Math and Ramakrishna Mission, provides us with precious insights on the history, culture, and ethnicity of this small but magical state known for its natural, cultural, and spiritual beauty.

Varanasi, the city of Shiva, is virtually a compressed cosmos. Through the vicissitudes of history it has nourished the best religious and cultural traditions of India. In its capacity to grant learning and liberation it has remained the beacon to which countless people have been turning for thousands of years. Swami Varishthanandaji of the Ramakrishna Mission Home of Service, Varanasi, provides us a bird's-eye view of some of the important facets of this city, beginning with **Varanasi: The City of Light**.

Lumbini and Kushinagar mark the beginning and end of the remarkable journey that was Gautama Buddha's life. To walk the trail that the Buddha left is an education in itself. Dr Dipak Sengupta, former Chief General Manager, Coal India Limited, takes us through a few steps on this enchanting track in **Walking the Buddha Path**.

Jerusalem is remarkable in being a centre of devotion of all the three major Semitic religions. It is also one of those cities that has been continually inhabited since ancient times. Despite the religious and ethnic conflict that it has been witnessing throughout its history, Jerusalem remains culturally upbeat and spiritually vibrant. **Jerusalem: Crossroads of History** is a perceptive relook at present-day Jerusalem by Dr Saibal Gupta, a surgeon and cultural historian from Kolkata.

Swami Ganganandaji of Centre Vedantique Ramakrishna, Gretz, gives us a short personal account of the ethos and ambience that mark the Islamic pilgrimage in **The Hajj: Unity in Diversity**.

Dr N Mukunda, Centre for High Energy Physics, Indian Institute of Science, Bangalore, concludes his survey of the **Philosophy of the Physical Sciences** with an analysis of the reasons that make the scientific method unique, even as its powerful conclusions can at best be tentative, and why mathematics is the language of science.

The philosophical underpinnings of the important branches of mathematics and of mathematical logic are discussed in the concluding portion of **The Philosophy of Mathematics** by Swami Sarvottamanandaji, Dean of Research, Ramakrishna Mission Vivekananda University, Belur.

The brief **Reminiscences of Sri Ramakrishna** by Trailokyanath Dev, a member of the Brahmo Samaj, have been made available in English by Swami Chetanananandaji, Minister-in-Charge, Vedanta Society of St Louis.

EDITORIAL

Crucibles of Culture

If you look at the present map of Old Jerusalem, you will find the city divided neatly into four distinct quarters—Jewish, Muslim, Christian, and Armenian (p. 579). 'What a strange fellowship this is,' one is likely to say with Huston Smith if one were to see the people in the four quarters simultaneously at prayer. Not because the voices are likely to be inharmonious or the prayers mutually incomprehensible, but precisely because the prayers would seem to be much the same in very many ways, belying the boundaries that we see on the map.

A closer look at the map will actually allow us to focus better on this proximity: the sacred Temple Mount straddling the eastern parts of the Jewish and Muslim quarters is actually associated with structures sacred to each of the three religions. But maps can at best tell us about physical proximity; they do not tell whether this translates into closeness of hearts and minds. For this we need to walk the streets and leaf through their history. And when we do this not just for Jerusalem, but also for other ancient cities—Varanasi for instance—we find strains of harmony as well as discord, the latter often more prominent simply because they are the more jarring.

But why should we bother to go through the above exercise? Sister Nivedita has pointed out that 'the Greeks dreaded any tampering with their native styles of music, for it had been noticed, they said, that no nation had ever changed its musical system without presently losing its whole political integrity and independence'. If the Greeks could think so of their music, different religions surely command a much more passionately exclusive following. History, moreover, is often a record of a series of unrequited wrongs. The massive mosque constructed by Aurangzeb over the demolished Bindu Madhava temple at Varanasi is one such record.

True, political history does not often make for very elevating reading. But both religion and culture have other facets that are of deeper and no less enduring significance. Anand Ram Mukhlish, an eighteenth-century lexicographer, was so keen on finding out how a certain word was pronounced in Iran that he kept listening closely to the conversation of the Persian soldiers of Nadir Shah even as they were pillaging Delhi in 1739. While this may appear to be neither the wisest nor the bravest thing to do in the aforementioned circumstances, it is this depth of intellectual and spiritual culture that allowed the various cosmopolitan cities to withstand the shock of conquest, desecration, and destruction. For instance, the traditions of learning—both religious and secular—for which Varanasi was famous, 'could not easily be broken, for they were independent of the rise and fall of temples'.

At an even deeper level—the spiritual and humanistic core of culture, a depth that admittedly very few are able to fathom—one is enabled to transcend apparently insurmountable cultural barriers, see through dogmatic blindfolds, bore channels of communication through mountains of suspicion, and ford treacherous streams of distrust. Sheikh Ali Haji, the famous Sufi saint-poet who had migrated to Varanasi from Persia around 1750, recorded his love for the city in a Persian couplet: 'I shall not leave Banaras ... it is a place of prayer for all. ... They bathe in the Ganga and rub their feet on its stones. ... How exalted the stone ... how exalted the body ... for having come in contact with the Holy Ganga.' Expressing such sentiments is possible only when one has allowed oneself to be fused in the crucible of cultures that a city like Varanasi is. In turn, it is this capacity to broaden human hearts and minds that makes these ancient cities uniquely important.

Prabuddha Bharata—100 years ago

Child-Heart: October 1907

Go forth, little one, and meet life
Strong in the strength of freedom from self,
The strength of purity,
The strength of love.

Link thee with the great souls of the past,
By reverence and worship.
One thee with the great deeds of the present,
By love and admiration.

Protect them that are without protection.
Serve whom thou rulest.
And to them that know not how,
Teach thou a way to defend themselves.

Be thy words few: speak through thy deeds.
Rest in no compromise.
When the hour cries out for sacrifice,
Be thou not deaf.
Strike swiftly: pardon generously:
Be wise withal.

Scale each ideal to its height.
Touch thou the stars.
Seek Truth as the end in itself.
Ask only for the Love that stays.

Work, questioning not as to victory or defeat.
Thirst thou after Perfection, with a quenchless thirst.

Very little art thou,—yet say ever
"Victory to Mother! Salutation to the Terrible!"
The prayer is prayed, and we who love thee
look out upon thy future,
We ask, what shall there be for thee of happiness,
Of play,
Of love?

Lo, O Beloved, art thou not the Free Heart?
Shall not life be to thee unshadowed play?—
All laughter, all lightness, all merriment, all glee?

To thee—to know great woes, and cease thereby
from all mean fretting!
To thee—to know vast joys, and cease thereby
from all gross pleasures!
To thee—the strenth and gentle-heartedness
of Destiny,
Own babe to the Divine Mother,
Child-Heart!
Child-Heart!
Child-Heart!

—*Sister Nivedita*

Swami Abhedananda's Address to the Students of Mysore

Our movement is a national one. It will spread all over the world and will bring together all religions. It will bring harmony out of discord and order out of disorder. Whether we are Vaishnavas, Saivas or Saktas, or followers of any one of the numerous creeds, the fundamental truths are the same. Our business is not to fight about particular theories, doctrines, creeds or cults; it is to attain to God-consciousness. There have been many spiritual leaders in the past, there will be many more in the future. God manifests Himself wherever and whenever He thinks it necessary. ...

Religion does not mean mere ritual. It does not consist in the external forms. It means self-realisation. Karma Yoga, or the practice of rituals and ceremonials, and other exercises of the body, are helpful in order to attain *Chitta Suddhi*, purity of the heart. When that is attained, all rituals and ceremonials become unnecessary. ... When *Chitta Suddhi* has been attained, real spiritual life begins. True religion begins when we realise God as the Universal Father and the Universal Mother.

Three Visits to Sikkim

Swami Smarananda

Khangchendzonga

SIKKIM is one of the most beautiful regions in the Himalayas. Though my last visit to Sikkim took place more than fifteen years ago, its memory is still fresh in my mind. It is this singular imprint that Sikkim leaves on one's mind that prompted me to put pen to paper to record some of my impressions that time has failed to erase.

East Sikkim: June 1988

I was looking for an opportunity to visit Sikkim. It came when I was visiting Dr Biswanath Chakravarty, the head of the department of orthopaedics at North Bengal Medical College, Siliguri. As soon as the proposal was made, he jumped at it and immediately offered to take us in his car to Nathula (Nathu Pass), situated at 14,200 ft above sea level in East Sikkim. Accompanied by Swami Vijayananda of Purnea (Bihar), we left for Gangtok in the early part of June 1988. At that time, Nathula was not open to civilians, not even to all cadres of the army. But Dr Chakravarty's friend Col. Parimal Chaudhury happened to be the commander of the Field Ambulance Corps in this sector. They had been classmates at R G Kar Medical College in Kolkata. So Dr Chaudhury was only too glad to learn about our proposed visit to Nathula and made arrangements for it.

By June 10, the scheduled day of our visit, the monsoon had set in with full fury. We stayed indoors overnight and left Siliguri for Gangtok the next morning. Gangtok, the capital of Sikkim, is 114 km from Siliguri. The winding road climbed slowly alongside the Tista River, which roared and dashed against boulders on its way to the plains. We crossed the river at Tista Bazar and entered Sikkim. Rangpo is the gateway to Sikkim. All vehicles have to undergo a check here. But seeing Dr Chakravarty with his military moustache, the guards perhaps mistook him for an army officer, and so did not choose to give us trouble! On reaching Gangtok, we were lodged in Siniolchu lodge, which is run by the Sikkim Government. Just above it is the Enchey Monastery, one of the several old monasteries of Sikkim. The lodge affords a commanding view of the snow peaks, but the heavy cloud cover denied us the sight. Rain was pouring non-stop. Still, we were determined to go ahead with our programme. We drove to the Army Officers' Mess en route to Nathula. This place is nearly 9,000 ft above sea level. After having our breakfast at the mess, we proceeded further, this time in an army vehicle. The ride on the serpentine road, with a deep valley on one side and a high mountain wall on the other, was, indeed, hair-raising. Deep down was the Changu Lake, a favourite tourist spot.

The road came to an end some 200 ft below the pass. There were army bunkers on all sides. With rain pouring heavily, the whole place was freezing. Swami Vijayananda started feeling giddy after a short climb. This was because of the altitude. He was told to take rest and was given a warm drink with vitamin C. A few minutes later he was normal again, and was able to join us on the upward trek. Finally, on reaching the army check-post, a handsome Rajasthani soldier offered us hot coffee and *bhujiya* (fries). At that height and in that biting cold, this was most welcome. From our location we could see the Chinese check-post located in the Chumbi valley which leads into Tibet. The Chinese soldiers spotted us and greeted us with a shouted 'Hello!' We reciprocated. Here at Nathula, the Indian army post is on a higher location than

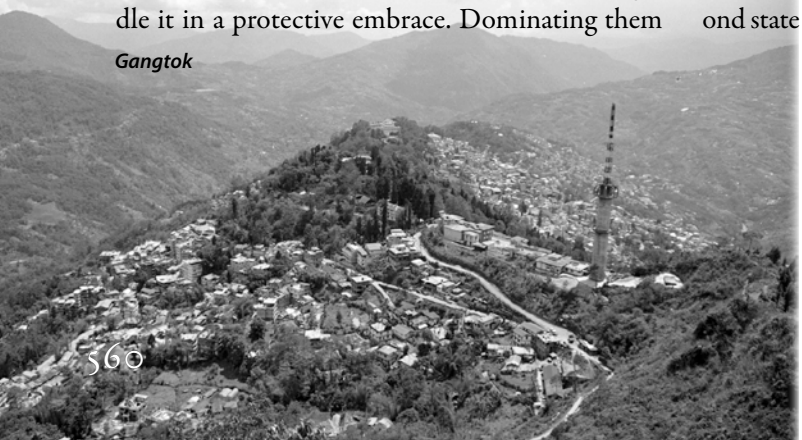
the Chinese, and so we had a better view. In between the two check-posts is no-man's-land. Every day, at a fixed hour, the two armies met there and exchanged mail and pleasantries, just for a few minutes! Of course, now the pass has been opened for trade and should see greater civilian exchange in times to come.

After spending a few minutes on the pass, we started back, for with heavy fog and cloud cover, we could hardly see the neighbouring peaks; besides, the cold was numbing. We climbed down to the army mess in about an hour. As we sat at the table, a jawan walked over to us, stood to attention, and announced: '*Srimanji, bhojan taiyar hai*; Gentlemen, food is ready.' With a delicious tomato soup—hot and soothing—as appetizer, the lunch tasted wonderful.

Let us now digress a little and get to know a bit about the land of Sikkim, and about its people and culture.

Geographical Diversity

Situated in the eastern Himalayas, Sikkim has a varied topography: the elevation ranges from 800 ft (244 m) to 28,000 ft (8,540 m), with virtually no flatland. In his book *Images of Sikkim*, Ramesh Sharma observes: 'In fact, most of the 7,300 sq km of Sikkim is interlaced with jungle-clad ridges and deep ravines created by, and through which, the raging torrents of the mountain rivers speed; and emerald valleys alternating with their terraced hillsides and dense forests. The waterfalls, rivulets, lakes, the abundance of orchids and snow-capped mountains all embellish the land, but the glory of Sikkim is the snow-capped mountains which girdle it in a protective embrace. Dominating them all and presiding over the terrain with immense dignity is Khangchendzonga, 28,208 ft (8,603 m), the world's third-highest mountain, sacred to the Sikkimese as their guardian deity.' Its name is translated as 'Five Treasures of the Great Snow'.



Gangtok

Khangchendzonga

Khangchendzonga is sacred to the Sikkimese and is worshipped at different times of the year. The mountaineering expeditions which climbed the peak were requested to stop 10 ft from the summit, as setting foot on the summit would amount to sacrilege.

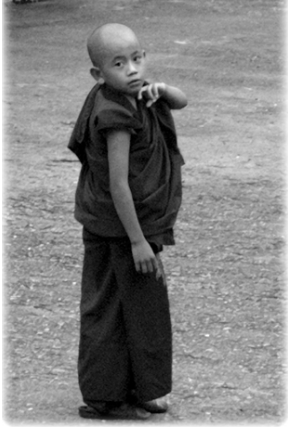
Sikkim is a tourist's as well as trekker's paradise. The wonderful calm of the Himalayas leaves an indelible impression on the mind.

Flora and Fauna

With such a wide range of elevations, Sikkim displays remarkably diverse climatic conditions—from the humid gorges at near-sea level to the alpine heights of perpetual snow and arctic cold. Though a small state, it has nearly 4,000 species of plants and trees and hosts 27 per cent of all bird species found in the Indian subcontinent. With 600 species of orchid and 30 species of Rhododendron, Sikkim is a flower-lover's paradise too. The Khangchendzonga National Park stretches across the northern and western parts of Sikkim. These dense forests contain various kinds of cedars, growing to majestic heights.

History

Sikkim was a hereditary monarchy till 1975, when it joined the mainstream to become the twenty-second state of India. Not much is known of its history before the seventeenth century. However, tradition tells us that Lepcha chiefs ruled the land in days of yore. The people believe that Guru Rimpoche Padmasambhava came from India and established Buddhism in Sikkim. The first organized government of Sikkim was formed in 1642 by the Bhutias and was headed by



Boy lama, Bhutia dancer, Nepali woman (anticlockwise from top)

Phuntsog Namgyal, who had the title of Chogyal, temporal and spiritual king. He encouraged the building of Buddhist monasteries in Sikkim. This Namgyal dynasty survived till 1975.

In the nineteenth century the British made Sikkim a protectorate under the British Indian Empire. An influx of Nepali traders, artisans, and other civilians followed soon after, and has continued to the present day. This disturbed the ethnic balance. The Lepchas and Bhutias, who are the earlier inhabitants, became minorities. Nevertheless, political power rested with the Sikkimese, that is, the Lepchas and Bhutias. Having originally come from Tibet, they established Lamaist Buddhism in Sikkim. The Nepalese, on the other hand, were mostly Hindus. In 1975, the monarchy was abolished; Sikkim embraced democracy and decided to merge with the Indian union following a referendum.

The People

The Lepchas are the earliest settlers of Sikkim. The Bhutias came later, in the fourteenth century. The cultural cross-pollination between the Lepchas and Bhutias resulted in a distinct Sikkimese community. The Bhutias who came from Tibet live in the higher altitudes and Lepchas in the middle valleys, while the Nepali predominate in the southern and eastern areas.

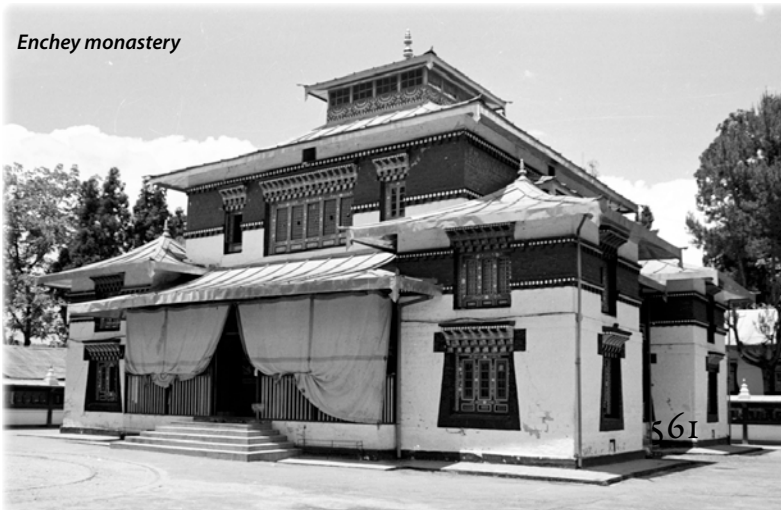
Sikkim is divided into four districts, Gangtok being the capital. The total population of the state is around 540,000. The Lepchas are tuned to Mother Nature. The birds, the orchids blooming on the rocks, the flowers of the forest, the shrill sound of insects—all these influence their culture. Their music and dance are related to nature. The Bhutias are Buddhists. They follow Lamaist Buddhism. Though most of the Nepalis are Hindus, some of them profess Theravada Buddhism.

Buddhist Monasteries

Tibetan Buddhists started constructing monasteries in Sikkim from the sixteenth century. Pemayangtse in West Sikkim is the oldest of such monasteries. The most prominent mantra written everywhere in these monasteries is '*Om mani padme hum*—Hail the jewel in the lotus!'

Tashiding is another important monastery. Built in 1716, it is situated on a hill between the two rivers Rangit and Ratong. The Rumtek monastery, 24 km from Gangtok, is quite big, and has a grand Dharma-chakra Centre, the official seat of the Karmapa, the head of the 'Red Hat' sect. Other important monasteries of Sikkim include the Ralong, Phodong, Enchey, Khatok, and Sang monasteries.

Enchey monastery



The major orders of Tibetan Buddhism are Nyingma, Sakya, Kagyu, and Geluk. The present Dalai Lama belongs to the Geluk Order (also known as the 'Yellow Hat' sect). The Nyingmas are the oldest sect. They trace their origin to Guru Rinpoche (Padmasambhava) himself.

On the Tour

The day after our return from Nathula, we went to see the Rumtek Monastery. A Sikkimese young man, an engineering graduate from Pune Engineering College, took us to this important monastery. It had been damaged by an earthquake a few decades ago, but has been beautifully rebuilt. The Rumtek Dharma-chakra Centre, is attached to the monastery and is indeed a tribute to Sikkimese architecture and workmanship. The sixteenth Gyalwa Karmapa, the head of the Karma Kagyu order, had to flee from Tibet following the Chinese invasion. After his passing, however, the search for the next Karmapa has resulted in a controversy, with the appearance of two claimants to this position. Most previous Karmapas were *tulku*s, reincarnated lamas, who often gave indications of their being the Karmapa at a young age, or were able to recall their previous life associations. On some occasions, the previous Karmapa had left hints regarding his successor. These traditional signs have not been able to resolve the Karmapa controversy as yet.

After the visit to Rumtek, we returned to Gangtok, and the next morning we took the road back to Siliguri.

Changu Lake, frozen solid

West Sikkim: February 1989

We were disappointed at having failed to see Khangchendzonga and other Himalayan peaks on our first visit to Sikkim. So we decided to undertake another trip, this time in the month of February 1989. We had hoped for good weather, but our hopes were thwarted: on reaching Gangtok, we found that there had been heavy snowfall all over Sikkim! Next morning we were to start for Pemayangtse in west Sikkim, 110 km from Gangtok. Pemayangtse has the most important Tibetan Buddhist monastery in Sikkim. Dr Chakravarty was running a low fever and could not go with us. So three of us—Swami Vijayananda, another gentleman from Siliguri, and I—started on the journey to Pemayangstse. The sky was overcast. Snow and rain continued by turns, and the cold was biting. But with snow everywhere, it was a heavenly sight. After we had gone seven or eight miles, the Siliguri gentleman realized that he had unfortunately left behind his camera in the hotel. So no pictures of the lovely snow-covered landscape could be taken.

At Rabangla (8,000 ft above sea level), we felt like having tea. But we found to our dismay that shops were selling Chang—a kind of rice liquor—instead! Anyway, we managed to persuade a shopkeeper to give us some tea, which however turned cold in no time! From Rabangla we moved to Legship. This settlement is in a valley, at the confluence of the river Rangit and one of its tributaries, and has a small temple dedicated to Kirateshwara Mahadeva.

We reached Pemayangtse at noon. The snow and rain were still falling. The verandas of the monastery were filled with water. The lamas were busy sweeping the water away. The monastery has some exquisite sculptures and tankas (religious murals), but we could not spend much time here due to the foul weather. We tried to find out if we could stay at the only hotel to be seen there, Hotel Pandim. When we approached the manager, he said, 'Well, due to the snowfall, there is no electricity, no water, and no arrangement for food. If you would still like to stay, I will have the doors of the hotel opened!' After getting this none too flattering an

Meeting with student lamas at Phodong monastery

invitation, wisdom consisted in our going over to Geyshing, a town below Pemayangtse. But where could we stay there? Luckily, Swami Vijayananda happened to remember that the daughter of a teacher in our Katihar school had been married to an engineer in this western town of Sikkim. So he went in search of the engineer and, to our great relief, found him. Soon we were treated to hot *luchi*s, *alu-dam*, and tea; and went to sleep in a big room under quilts!

Next day, we drove back to Gangtok. By the time we reached our hotel, the weather had improved. But the cold was forbidding, and we remained confined to our rooms. The following morning, on waking from sleep, as I looked out of the window, I beheld a wonderful sight before me—there was the majestic Khangchendzonga, its snow-capped peak turned into a mass of gold and copper by the rays of the morning sun! The purpose of our visit had been fulfilled. We could now start on our journey back to Siliguri.

North Sikkim: November 1990

Sikkim calling again! The destination this time is North Sikkim. We decided to travel in November, as there is virtually no possibility of bad weather in November. This proved right. The weather was excellent, and the snow peaks were shining in full glory. This time too we stayed at the Siniolchu lodge run by the Sikkim Government, but travelled by tourist bus.

We travelled through Mangen to Phodong monastery. This is one of the important monasteries in Sikkim. There are many young student lamas here, and we had a group photo with them. We proceeded further and halted for the night at Lachung. Lachung is a small village, nearly 10,000 ft above sea level. It boasts of a small monastery also. Next morning we left for Yumthang, the last village on the Indian border. A stretch of snowy waste separates this village from China.

Yumthang has lots of Rhododendron bushes. But November is not the season for them to flower. Were it spring, the place would have been full of flowers of various colours. There is a beautiful stream nearby crossed by a wooden bridge. On going over to the other side, a small village comes in view. The Lepchas and Bhutias living here eke out a bare living, depending upon forest produce. There is a hot spring in this village. The hot water is channelled into a tank containing cold water. Swami Shivamayananda and I had a bath in this warm water tank.

Returning to Lachung after lunch, we proceeded to the Lachen monastery. The path lay through the thick reserve forest of the Khangchendzonga National Park. The road was rough. We reached Lachen with some difficulty and proceeded to the monastery. But no lamas were to be found there. The monastery building was undergoing thorough renovation, so the lamas had moved out temporarily. Lachen is a small village with a few shops. Here too tea was difficult to procure, though Chang, the local liquor, was available in plenty. The drink is kept in a big bamboo tube. Those who wish could drink to their heart's content through a bamboo pipe! This was our last stop before we started on our return journey to Gangtok and then back to Siliguri.

Sikkim is one of the most beautiful parts of the Himalayas. The flora and fauna, the people with their exotic costumes and dances, and the Buddhist monasteries with their mystic atmosphere—each of these invites the tourist to a rich experience, an experience that is bound to be remembered for a long time. Dominating over all these, however, is Mount Khangchendzonga, the third highest peak in the world, majestic and awe-inspiring.

Will Sikkim attract me a fourth time? PB

Varanasi: The City of Light

Swami Varishthananda

Once, some of us monks were taking a boat ride on the Ganga in Varanasi. Kashi's son was our boatman. Kashi is the head of the family whose members have traditionally been the boatmen for the monks and devotees of the Ramakrishna Mission. Like the average Banarasi, he too is a great storyteller. Ours was primarily a non-Hindi-speaking group. But Kashi was not to be intimidated by this. As soon as the boat was free from its moorings, he started briefing us in his broken English: 'Varanasi is famous for three things—learning, burning, and turning.' Even as we were all intrigued by the 'turning', he went on to elaborate—with a great sense of drama—how Varanasi has been famous throughout its history for 'learning' and 'burning'! He then asked us what it was that struck us as so very evident in Varanasi—this city of learning and burning? Before we could venture a reply, he added philosophically: 'Squalor and dirt! And why is this so? The reason is that every time a senior officer decides to change the situation in Varanasi, he is transferred—that's the "turning" part of Varanasi!'

Yes, this is the story of Varanasi, the city of ethereal holiness and sanctity. Situated on the western bank of the Ganga as it takes a northward turn in eastern Uttar Pradesh, it is bounded by the small tributaries Varuna and Asi which give it its name. This is the story of Kashi, the city of light and liberation, which name is derived from the same Sanskrit root as *prakāśa*, which means light—*kāśayati prakāśayati iti kāśi*. This is the story of the eternal abode of Baba Vishwanatha, the Lord of the Universe, the presiding deity of the city, the *raison d'être* of this 'holiest of holy' cities of the Hindus—a place of pilgrimage not only for Hindus, but also for Buddhists, Jains, and Muslims. This is the story of Benares, the corrupted English form of the original Pali 'Baranasi'—the city of sannyasins and sages, of savants and scholars, of statesmen and stars, of saints and sinners. Finally, this is the story of the city which gave to the world the modern incarnation of Shiva—Vireshwara Shiva, Biley, Swami Vivekananda—who made the city the home of the Ramakrishna Mission Home of Service—the embodiment of his philosophy of *shiva jnane jiva seva*, service of God manifest in humans!

The Holy City of Vishwanatha

Once Swami Bhuteshananda, the twelfth president of the Ramakrishna Order, was reminiscing about his days with Mahapurush Maharaj, Swami Shivananda, the second president of the Order. Having gladly given his assent to Swami Bhuteshananda's ardent desire to lead a life of austerity in solitude, Mahapurush Maharaj told him: 'You go to Kashi; Kashi, the abode of Vishwanatha, is a place especially favourable for austerities'. This is the quintessence

Entrance to Annapurna temple, left, and golden spires of Vishwanatha temple, right

of Varanasi: its vibrant spiritual atmosphere. Hindu mythology asserts that this eternal city of Lord Shiva, which does not get destroyed during *pralaya*, is resting on the trishul of Shiva. Topographically, the three main Shivas—Omkareshwara, Vishweshwara (Vishwanatha), and Kedareshwara are indeed situated on top of three hills which constitute Varanasi. Even today when one enters the shrine of Baba Vishwanatha, as the Lord of the Universe is lovingly called by his votaries, after having taken a dip in the purifying waters of Mother Ganga and having wound one's way through the reassuringly familiar Vishwanatha Gali (lane), and having paid one's obeisance to Dhundhiraja Ganesha, in the midst of much hustle and bustle with sounds of ringing bells and chants of 'Hara, Hara, Mahadeva' reverberating all around, this dense spiritual atmosphere is palpable; it envelops perceptive devotees and raises their consciousness to the feet of the Lord, where it remains effortlessly held.

The atmosphere of holy spirituality is undoubtedly densest within the precincts of the shrine of Vishwanatha, especially in the sanctum sanctorum; yet the whole atmosphere of Varanasi is spiritually surcharged and is especially conducive to religious and scholastic pursuits and spiritual growth. No wonder then that this city of celestials is home to all gods and goddesses, and attracts monastics and lay persons from all the various sects, denominations, and sub-sects of Hinduism.

Across the lane that leads to the golden-spired shrine of Baba Vishwanatha, is the temple of Ma Annapurna. These two temples symbolize the essence of Indian culture, eloquently articulated in this well-known couplet:

> *Mātā me pārvatī devī pitā devo maheśvara*;
> *Bāndhavāḥ śiva-bhaktāśca svadeśo bhuvana-trayam.*
>
> My mother is Devi Parvati; my father Lord Maheshwara, my relatives are Shiva's devotees, and my home all the three worlds.

Even today, it is a treat to watch two Banarasis meeting within the precincts of these temples and joyously greeting each other with 'Hara, Hara, Mahadeva, Hara, Hara, Hara!'

Both these temples have a number of smaller shrines within their precincts. Mother Annapurna's is a 'golden' image with a bowl and spoon in hand—she feeds the entire universe with *anna* (food). Besides the image in which she is available for daily darshan, there is one made of solid gold which is unveiled for darshan only on the three days of Diwali. Devotees consider the darshan of the golden Annapurna to be especially efficacious for obtaining life-sustaining *anna*! On the last day of this darshan, the Annakuta (mountain of food) festival is observed in the temples of both Mother Annapurna and Baba Vishwanatha. The one prayer which all her devotees have in their hearts and on their lips is:

> *Annapūrṇe sadāpūrṇe śaṅkara-prāṇa-vallabhe*;
> *Jñāna-vairāgya-siddhyarthaṁ bhikṣāṁ dehi ca pārvati.*
>
> O Annapurna, who art ever-full! O beloved of Shankara! O Parvati! Grant us alms that we be firmly established in knowledge and renunciation.

Though the shrines of Baba Vishwanatha and Ma Annapurna are the principal temples of Kashi,

Tirtharaja Kashi has numerous other shrines, including those corresponding to other important shrines of India—from that of Kedaranatha in the north to Rameshwaram in south India. In fact, there is a popular Hindi saying: '*Kashi ke kankar sab shiv shankar*; even the pebbles of Kashi are all Shiva!' However, among the numerous shrines in this city of temples—each with its own uniqueness and glory—the important ones include the temples of Sankata Mochana, Durga Kunda, Kedaranatha, Kala-Bhairava, Vireshwara Shiva, Bindu Madhava, Tila-bhandeshwara, Bharata Mata, and Vishwanatha (at BHU).

The medieval poet-saint Tulsidas was one of Kashi's famous residents. It was his daily practice to pour some water at the foot of a certain tree. A ghost who happened to live on this tree—and ghosts are known to be particularly thirsty creatures—was highly pleased with this service of Tulsidas's and decided to grant him a boon. The devotee that he was, Tulsidas asked the ghost for a vision of Sri Rama. The ghost directed Tulsidas to a place where a discourse on the Ramayana was in progress and which Hanuman was attending in the guise of an old Brahmana afflicted with leprosy. Tulsidas went to the designated spot, recognized Hanuman, and was directed to go to Ayodhya for the darshan of Sri Rama. Tulsidas, in turn, requested Hanuman to remain in Kashi for the good of the world. Later on, digging deep at that very spot, Tulsidas discovered an image of Hanuman. This he consecrated as Sankata Mochana—the remover of perils. Hanuman or Mahavira is Rudravatara—the incarnation of Rudra-Shiva. He is a great devotee of Sri Rama. The temple of Sankata Mochana is an important place of religious worship and cultural festivities.

The shrine of Bindu Madhava

Next to Sankata Mochana is the famous temple of Divine Mother Durga—popularly known as Durga Kunda because it is situated beside a big tank with the same name. The *Devi Mahatmya* reminds us that people worship Mother Durga because—

> *Durge smṛtā harasi bhītim-aśeṣa-jantoḥ*
> *svasthaiḥ smṛtā matim-atīva śubhāṁ dadāsi*;
> *Dāridrya-duḥkha-bhaya-hāriṇi kā tvadanyā*
> *Sarvopakāra-karaṇāya sadārdracittā.*
>
> Remembered in distress you remove the fears of all beings, remembered in happier times you bestow the most beneficent of intellects; who other than you—whose heart bleeds for all—can remove poverty, unhappiness, and fear?

Varanasi has the unique distinction of having separate temples dedicated to all the nine forms of Mother Durga: Shailaputri, Brahmacharini, Chandraghanta, Kushmanda, Skandamata, Katyayani, Kalaratri, Mahagauri, and Siddhidatri, as well as to all the nine manifestations of Gauri. This is but natural, for Varanasi is the abode of all the gods and goddesses in their myriad forms.

Not only the gods, but all the *tīrtha*s too reside in Varanasi. One of the most famous of these *tīrtha*s is Kedareshwara. Situated on the banks of the Ganga, a steep flight of steps leads up to this temple with red and white vertical stripes painted on its outer walls in the fashion of South Indian temples. This linga of Shiva is *svayaṁbhū*, 'self-manifest'. During her visit to this temple, Holy Mother Sri Sarada Devi also confirmed the scriptural assertion that this self-manifest Kedara is the same as the Kedaranatha seated in the Garhwal Himalayas and that one gets the same religious benefits on darshan of either of these Kedara lingas. However, the location of this *tīrtha* in Kashi endows the entire Kedara *kṣetra* (territory) with power to directly liberate all persons who die within its territory, without

even having to suffer at the hands of Kala Bhairava, the master of time. Incidentally, the Ramakrishna Mission Home of Service is located in this *kṣetra* of Kedara—the great liberator!

Another important *kṣetra* is the Siddha Kshetra, the 'Field of Fulfilment'. Here, above the Scindia Ghat, is the temple of Vireshwara, or 'Lord of Heroes'. It is said that the sage Vishwanara, yearning for a son, did tapasya here and was blessed with a son, Vaishwanara, through Shiva's boon. Even to this day Vireshwara Shiva is propitiated by couples who wish to have a son. Swami Vivekananda's birth too followed such tapasya by his mother.

Immediately south of Scindia Ghat is Manikarnika Ghat, famous throughout India as the cremation ground where Shiva and Parvati confer liberation upon departed souls. It is this Manikarnika Ghat, along with the Harishchandra Ghat, named after the famous king whose name is synonymous with truth and generosity, that makes Kashi famous as the place of liberation through death. This mukti is sought after by numerous devout Hindus, especially in their old age—and this was the 'burning' part of our boatman's story!

To the north of Scindia Ghat is the famous temple of Bindu Madhava, the deity whom Holy Mother found to be *jāgrata*, awakened. Holy Mother also found Tila-bhandeshwara—the Shivalinga that keeps growing every day the size of a sesame seed, *til*—to be particularly awakened. The story of Kashi temples and of pilgrimage to Kashi remains incomplete without a visit to the Kala Bhairava temple, the guardian angel of Kashi. Kala Bhairava has dogs for his mount, and this makes us, the residents of Kashi, wary of harming even stray dogs within the precincts of the city.

Finally we have the modern Kashi Vishwanatha temple on the Banaras Hindu University campus. The uniqueness of this modern two-storeyed temple is that it has shrines dedicated to each of the five important deities of the Hindu pantheon—Shiva, Vishnu, Durga, Ganesha, and Surya—with the sun shining outside the temple! But that is not all; adorning the walls of this temple are murals depicting the best of Indian tradition, not just Indian religions—from health, through history, to harmony of religions. It is a rare treat to spend a few hours in this temple with a knowledgeable guide, to be educated about the best elements in Indian culture—grammar, chemistry, statecraft, language, and architecture; the spiritual tradition of the Vedas, Upanishads, Ramayana, Mahabharata, Bhagavata, and *Durga-saptashati*; the inspiring lives of saints and sages; family life and world peace; as well as Sankhya and Yoga. It also has the entire Bhagavadgita inscribed on its walls.

Like the temple it houses, Banares Hindu University or BHU is also unique. Apart from being reckoned the largest residential university campus in Asia—its two campuses are spread over 1,300 and 2,700 acres respectively—it is a seat of learning for virtually every important occidental and oriental branch of knowledge. The 3 institutes with 15 faculties and 127 departments of the university provide residential educational facilities in a host of disciplines—from Sanskrit studies and theology to rocket, missile, and ceramic engineering—to tens of thousands of students on a single campus. The


Kashi Vishwanatha Temple at BHU

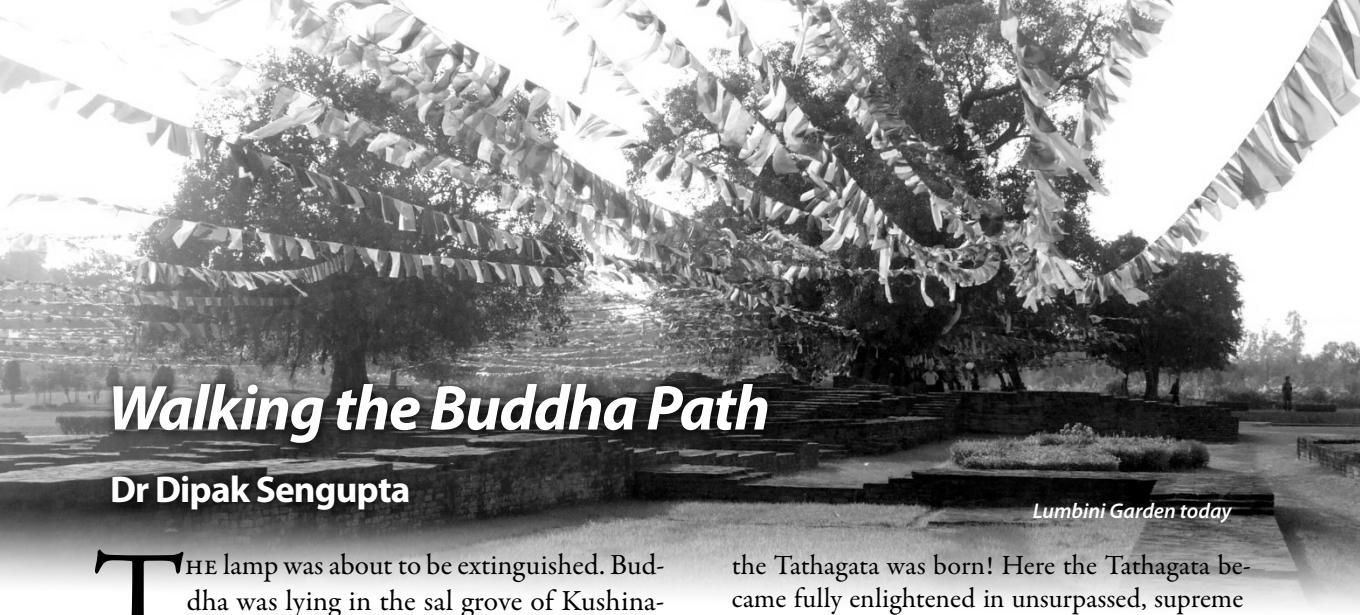
Stacks of wood for the cremation fires

education is subsidized and places little economic burden on the students. The university also has a museum, Bharat Kala Bhawan, with nearly a lakh exhibits including a rich collection of Indian miniature paintings, sculptures, a rare philatelic and numismatic collection, unique textiles, and galleries dedicated to Alice Bonner, Nicholas Roerich, M K Gupta, and Pandit Madan Mohan Malviya, the founder of BHU.

There are two other universities in Varanasi—the Mahatma Gandhi Kashi Vidyapith and Sampurnanand Sanskrit University. Besides, the city is also home to two deemed universities—the Safia Islamia and the Central Institute of Higher Tibetan Studies, as also two autonomous colleges: Udai Pratap College and Agrasen Girls Postgraduate College. Apart from these institutes of higher learning, Varanasi has numerous schools and colleges as well as many trusts and private institutes committed to good education. But it is the pandits of Varanasi that are especially famous throughout the length and breadth of the country, not only for their depth of scholarship, but also for not accepting money to impart knowledge. This is true of both monastic scholars as well as householder pundits. It is remarkable that in these days of globalization and commercialization Kashi still has great householder-scholars painstakingly imparting knowledge even to pupils of great means without accepting any monetary remuneration.

It was at Sarnath near Kashi that Bhagavan Buddha set in motion the 'wheel of Dharma' with his first sermon following enlightenment. Sarnath had a huge Buddhist monastery as well as three stupas and an Ashokan pillar with a lion capital on top. The Sarnath museum is renowned for its pre-Gupta and Gupta period sculptures, of which the meditative Buddha and the Ashokan Lion Capital are the most famous. Saranath is also home to the Mahabodhi Society, which was started by Angarika Dharmapala on his return from the World Parliament of Religions—where he had been one of Swami Vivekananda's co-delegates. With its many Buddhist and Jain temples, Sarnath is an important tourist and pilgrimage place for Buddhists and Jains alike. Varanasi and the neighbouring district of Jaunpur are also famous seats of Islamic studies. No wonder, this ancient city—'older than history, older than tradition, older even than legend and [which] looks twice as old as all of them put together', as Mark Twain put it—has been described by Sir Edwin Arnold as 'the Oxford and Canterbury of India in one'! So much for the boatman's 'learning'. (*To be continued*)

***Manikarnika Ghat: the* mokṣa-kṣetra**



Walking the Buddha Path

Dr Dipak Sengupta

Lumbini Garden today

The lamp was about to be extinguished. Buddha was lying in the sal grove of Kushinagar. His *parinirvana* was near. Lamenting, Ananda said that previously, very revered bhikkus used to come to see the Enlightened One, and that he and other monks had the benefit of receiving and associating with them. 'But, Lord, after the Blessed One has gone, we shall no longer have that gain and benefit.'

The Blessed One replied:

> There are four places, Ananda, that a pious person should visit and look upon with feelings of reverence. What are the four?
>
> 'Here the Tathagata was born!' This, Ananda, is a place that a pious person should visit and look upon with feelings of reverence.
>
> 'Here the Tathagata became fully enlightened in unsurpassed, supreme Enlightenment!' This, Ananda, is a place that a pious person should visit and look upon with feelings of reverence.
>
> 'Here the Tathagata set rolling the unexcelled Wheel of the Dhamma!' This, Ananda, is a place that a pious person should visit and look upon with feelings of reverence.
>
> 'Here the Tathagata passed away into the state of Nibbana in which no element of clinging remains!' This, Ananda, is a place that a pious person should visit and look upon with feelings of reverence.
>
> These, Ananda, are the four places that a pious person should visit and look upon with feelings of reverence. And truly there will come to these places, Ananda, pious bhikkhus and bhikkhunis, laymen and laywomen, reflecting: 'Here the Tathagata was born! Here the Tathagata became fully enlightened in unsurpassed, supreme Enlightenment! Here the Tathagata set rolling the unexcelled Wheel of the Dhamma! Here the Tathagata passed away into the state of Nibbana in which no element of clinging remains!'
>
> And whoever, Ananda, should die on such a pilgrimage with his heart established in faith, at the breaking up of the body, after death, will be reborn in a realm of heavenly happiness.[1]

So Buddha himself specified four places of pilgrimage for his followers: Lumbini, his place of birth; Bodhgaya, the place of his enlightenment; Sarnath, the place of his first sermon; and Kushinagar, the place of his *parinirvana*. If we examine a map of eastern India and Nepal, we find all these sites to be within a circle of radius 125 km or so. This was the area in which the Enlightened One walked, preached his dharma, and taught the eightfold path. Lumbini and Kushinagar are some 50 km north and northeast of Gorakhpur. Bodhgaya and Sarnath lie on the southern edge of the circle.

Lumbini: the Lord Takes Birth

Our itinerary stated that we would reach Lumbini from Kathmandu via Pokhra by bus, but the plan was totally derailed due to the ongoing Maoist uprising in Nepal. A bandh had been declared all over Nepal, and the west and south were worst hit. For days there was virtually no transportation available. We were staying in Kathmandu with Sri Pradhan Shrestha. He has built a small Sri Ramakri-

shna temple in his house, and every evening a group gathers there for arati and a few devotional songs. It is remarkable that, even with his busy schedule, he is managing to spread the ideals and teachings of Sri Ramakrishna and Swami Vivekananda. In spite of the comfort of staying at his place, we were getting impatient to reach Lumbini. Our host finally procured two air tickets for us to Bhairahawa, the airport nearest to Lumbini. He also arranged for accommodation in the hotel nearby along with a pickup facility from the airport. The hotel manager verified that only two of us were travelling. We understood his concern later.

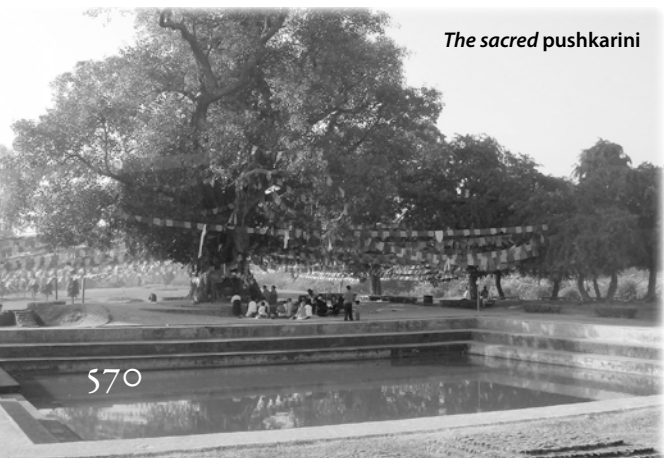
We came out of the airport at Bhairahawa. To our astonishment, there was no car to be seen. But a vehicle was waiting for us all right—a cycle rickshaw with a placard! Because of the Maoist uprising there were no cars plying the roads. A rickshaw was the only hope. We thought the hotel would be nearby. After getting on to the rickshaw I asked the driver how far the hotel was. Twenty-two kilometres, he replied. Did I hear it right? Twenty-two kilometres on a rickshaw! The next milestone assured me that twenty-two kilometres was indeed the right figure. So off we went. There were no vehicles on the road save a few cyclists. All shops were closed. A few people were gossiping on the charpoys, giving us curious looks. We noticed two buses burning on the roadside. It was not an unusual sight for a Kolkatan, but I would lie if I said I was not scared. Our rickshawalla's name was Ramesh, same as my father's. That was the only comfort.

Ramesh pushed the pedals non-stop for an hour and a half under the scorching sun without a sip of water till we reached our destination. The Lumbini Garden Lodge was quite a big hotel designed and maintained mostly for foreign tourists and pilgrims. We saw a couple of tourist buses standing outside, and a group of Japanese pilgrims was waiting in the lobby. There were no restrictions on tourist buses carrying foreigners. Generally the Buddhist tours start from Bodhgaya, which today has an international airport. From there the pilgrims move by bus to Sarnath and Kushinagar, and finally to Lumbini. From here they will again go back to Bodhgaya for the homebound journey. One of the elders expressed his gratitude to the Enlightened One for the blessing he received to visit the pilgrimage sites. Though quite religious, he was also a down-to-earth man and argued noisily with the receptionist on the exchange rate of the dollar.

As evening approached we walked to the Lumbini Park, some half a mile from the hotel. Ramesh tagged along with us as a guide. He was a local boy, and had witnessed the changes to Rummindei—the local name for Lumbini—as it became an international pilgrim centre. He saw the trees felled, ground cleared to create a beautifully manicured garden, and a series of monasteries coming up one by one. Strange people with stranger dialects crowded the place. He hardly understood this transformation—though he clearly saw that more money was flowing into the area.

We crossed a creek—the Telar river—and entered the main garden. The temple to Mayadevi, Buddha's mother, stood at the centre of the garden. It was a large rectangular single-storey building with an entrance on one side and a pinnacled room on the roof for meditation. There were ruins of stupas and monasteries all around the place. To the south was the famous sacred pond, or *pushkarini*, where Mayadevi is believed to have bathed before giving birth to Siddhartha. It was also in this pond that the blessed infant was given his first purificatory bath.

We walked around the *pushkarini* and the temple while Ramesh told us the story of Siddhartha's birth. We go back to Kapilavastu, the capital of



***The sacred* pushkarini**

the Kingdom of the Shakyas during Shuddodhana's reign as chieftain. Mayadevi, the Shakya queen, was pregnant and nearing the time of delivery, and wanted to visit Devadaha, her paternal home. Shuddhodana decorated the path with flowers, leaves, and gold and silver festoons. On the way to Devadaha they stopped at Lumbini, which was about twenty miles from Kapilavastu. After bathing in the *pushkarini*, she climbed the steps. She had been pregnant for a full ten months; suddenly she felt her labour pains begin. She gasped and caught hold of a branch of a sal tree for support—and Siddhartha was born. That pose became fixed and immortalized not only here but also in so many other sculptures throughout India. While telling the story Ramesh almost became emotional. Maybe he was remembering his daughter in labour pain. A 2,500-year-old-veil was suddenly removed and the scene became so real. We all stopped. The sandstone relief of Mayadevi holding the branch of a sal tree with the infant Siddhartha at her right side is the centrepiece of the Mayadevi temple. Mayadevi's sister, Gautami Prajapati, is standing beside her, supporting her during the delivery. This is known as the nativity sculpture, and dates from the fourth century CE, the time of the Gupta dynasty. Siddhartha is standing on a lotus pedestal with two celestial apsaras receiving him. In front of the sculpture there is placed a stone conglomerate covered with a bullet-proof case. The marker stone measures 70 × 40 × 10 cm. This is believed to mark the exact spot where Mayadevi stood to give birth to the future Buddha.

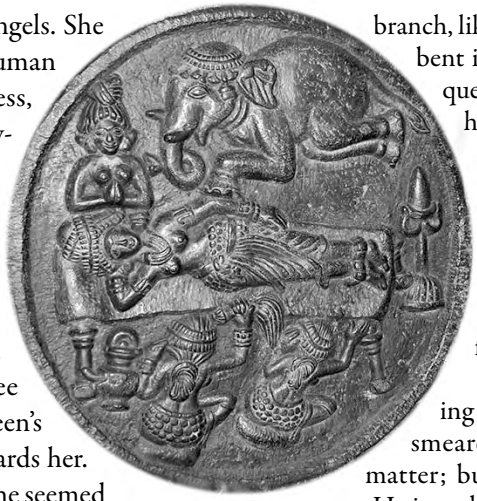
The Nativity: a modern recreation of the 4th cent. sculpture

There are different versions of Siddhartha's birth story, which become more and more mythical as time goes on. Ashvaghosha was probably the first important biographer, though the *Mahavastu*, in its core, is an earlier work. He lived, probably, in the first half of the second century CE, during the Kushan reign. His authoritative work *Buddhacharita* was translated from Sanskrit and Tibetan by E H Johnston. Canto I describes the birth of the Holy One:

> This ruler of men [Shuddhodana], dallying with his queen, enjoyed, as it were, the sovereign glory of Vaiśravaṇa. Then without defilement she received the fruit of the womb, just as knowledge united with mental concentration bears fruit.
>
> Before she conceived, she saw in her sleep a white lord of elephants entering her body, yet she felt thereby no pain. ...
>
> From the side of the queen, who was hallowed by her vows, a son was born for the weal of the world, without her suffering either pain or illness. ...
>
> When in due course he had issued from the womb, he appeared as if he had descended from the sky, for he did not come into the world through the portal of life; and, since he had purified his being through many aeons, he was born not ignorant but fully conscious. ...
>
> And looking to the four quarters with the bearing of a lion, he uttered a speech proclaiming the truth: 'I am born for Enlightenment for the good of the world; this is my last birth in the world of phenomena.' ...
>
> At his birth the earth, nailed down as it was with the king of mountains, trembled like a ship struck by the wind; and from the cloudless sky there fell a shower perfumed with sandalwood and bringing blue and pink lotuses.[2]

In the Jataka birth stories, the event of Siddhartha's birth is described in greater detail. At the time of the midsummer festival at Kapilavastu, Queen Mayadevi had a strange dream. She dreamt she was taken to the Himalayas while sleeping on

her couch by four guardian angels. She was bathed to remove her human stains, clothed in divine dress, and decked with heavenly flowers. Then she was laid down on a divine couch with her head to the east. The future Buddha took the shape of a white elephant and approached her from the north, plucking a white lotus on his way. Three times he walked round the queen's couch with his right side towards her. Striking her on the right side, he seemed to enter her womb. Thus the conception took place. The *Jataka Nidana* relates:



Mayadevi's dream
5th cent. medallion,
Indian Museum, Kolkata

> From the time the Future Buddha was thus conceived, four angels with swords in their hands kept guard, to ward off all harm from both the Future Buddha and the Future Buddha's mother. No lustful thought sprang up in the mind of the Future Buddha's mother; having reached the pinnacle of good fortune and of glory, she felt comfortable and well, and experienced no exhaustion of body. And within her womb she could distinguish the Future Buddha, like a white thread passed through a transparent jewel. And whereas a womb that has been occupied by a Future Buddha is like the shrine of a temple, and can never be occupied or used again, therefore it was that the mother of the Future Buddha died when he was seven days old, and was reborn in the Tusita heaven.[3]

After ten (lunar) months the queen expressed her desire to visit Devadaha. Along the queen's route, there was a pleasure grove of sal trees called Lumbini Grove. The grove, at this time, was one mass of flowers—from ground to topmost branch—with swarms of bees humming around the flowers and flocks of birds singing sweetly. The account continues:

> When the queen beheld it she became desirous of disporting herself therein, and the courtiers therefore took her into it. And going to the foot of the monarch sal-tree of the grove, she wished to take hold of one of its branches. And the sal-tree branch, like the tip of a well-steamed reed, bent itself down within reach of the queen's hand. Then she reached out her hand, and seized hold of the branch, and immediately her pains came upon her. Thereupon the people hung a curtain about her, and retired. So her delivery took place while she was standing up, and keeping fast hold of the sal-tree branch.
>
> Now other mortals, on issuing from the maternal womb, are smeared with disagreeable, impure matter; but not so the Future Buddha. He issued from his mother's womb like a preacher descending from his preaching-seat, or a man coming down a stair, stretching out both hands and both feet, unsmeared by any impurity from his mother's womb, and flashing pure and spotless, like a jewel thrown upon a vesture of Benares cloth. Notwithstanding this, for the sake of honoring the Future Buddha and his mother, there came two streams of water from the sky, and refreshed the Future Buddha and his mother.
>
> Then the Brahma angels, after receiving him on their golden net, delivered him to the four guardian angels, who received him from their hands on a rug which was made of the skins of black antelopes, and was soft to the touch, being such as is used on state occasions; and the guardian angels delivered him to men who received him on a coil of fine cloth; and the men let him out of their hands on the ground, where he stood and faced the east. ...
>
> [He] strode forward seven paces, followed by Mahā-Brahma holding over him the white umbrella, Suyāma bearing the fan, and other divinities having the other symbols of royalty in their hands. Then, at the seventh stride, he halted, and with a noble voice, he shouted the shout of victory, beginning,—'The chief am I in all the world' (ibid).

Mayadevi lying on her left side on a couch with an elephant hovering over her is a common theme in Buddhist friezes from Sanchi to Amaravati. In the sculptures as well as birth stories the character of Shuddhodana is conspicuously absent. Western


Mayadevi temple with Ashoka pillar in front (left); pilgrims light candles on the stupa (right)

scholars will like to call it 'virgin birth' and compare it with Jesus Christ's birth stories.

Time, the All-destroyer

We left Mayadevi's temple and walked around the ruins. So many kings and *shreshthi*s (bankers) had visited this site and offered their prayers here. So many stupas were built in memory of the Enlightened One. So many bhikkus and bhikkunis gathered here to renounce the material world '*bahujana hitaya, bahujana sukhaya*; for the good of the many, for the happiness of the many'. Through the ages, people flocked here to pay homage to the Buddha. Emperor Ashoka came in the year 249 BCE, built stupas, and raised a pillar to commemorate his visit. After this some unknown cataclysm affected Lumbini.

When Chinese pilgrim Faxian visited Kapilavastu in 403 CE he found the place in ruins; 'of the inhabitants there were only some monks and a score or two of the common people'. Two hundred thirty years later Xuanzang described one thousand derelict monasteries (though this was probably hearsay) and an Ashokan pillar broken in two by lightning, the top half lying on the ground. Time had taken its toll. By then the Buddha-dharma had declined in India, and nobody was there to look after the place. The last recorded visit in the historical period was that of the Nepali king Ripu Malla in 1312 CE, who mentioned the nativity sculpture. Muslim and Mughal invaders arrived in the region in the14th century and destroyed the remaining monuments at both Kapilavastu and Lumbini. The jungle of the terai returned to cover what remained. In time the Buddha-dharma became almost unknown in India, and everybody forgot about Lumbini. The place came to be known as Rummindei

For 2,500 years India has suffered blow after catastrophic blow, transforming her on the anvil of destiny into a new nation. The Buddha-dharma declined, Hindu kingdoms revived. The Muslim invasion pushed the Indian religions to the walls. Then came the British, with a keen curiosity about India's ancient heritage. Buddha's birthplace would have been lost forever had Ashoka not erected a pillar with the definitive statement '*Hida budhe jate sakyamuniti*; here was born the Buddha, the sage of the Shakyas'. The sentence was inscribed not to create any historical record but to honour the village, allowing it a tax relief. The *Ashokavadana* gives an account of Ashoka's visit to the sacred places under the guidance of Upagupta, his acharya. The inscription on the Lumbini pillar reads as follows:

> Twenty years after his coronation, Beloved-of-the-Gods, King Piyadasi, visited this place and worshipped because here the Buddha, the sage of the Sakyans, was born. He had a stone figure and a pillar set up and because the Lord was born here, the village of Lumbini was exempted from tax and required to pay only one eighth of the produce.[4]

In the latter half of the nineteenth century, the investigations into Indian antiquity conducted largely by the British stimulated an interest in Buddha and his religion. Buddhist scriptures from different parts of India, Sri Lanka, China, Tibet, and Thailand were collected, deciphered, translated, and studied. The travelogues of Chinese pilgrims like Faxian and Xuanzang, which noted in minute detail the features of the Buddhist sites they visited, including the distances between them, became

guidebooks for the archaeologists, both professional and amateur. Inquisitive European scholars started locating these ancient sites, and the map of north India became dotted with Buddhist places of interest. Yet, two crucial sites remained to be found: Lumbini, the place of Buddha's birth, and Kushinagar, the place of his *parinirvana*.

In March of 1893, a major in service of the government of Nepal stumbled by chance on an Ashokan pillar near a place called Nigliva, near the India-Nepal border. The inscription, deciphered by amateur historian Vincent Smith, the then city judge of Gorakhpur, states, 'God beloved king Piyadasi increased the stupa of Konagamana for the second time.' Konagamana was the Pali name for Kanakamuni, one of the early Buddhas. Smith did not realize the importance of this discovery. But this site was mentioned by both Xuanzang and Faxian, though they describe its distance and direction from Kapilavastu quite differently. Austin Waddell, a military doctor and amateur archaeologist, sensed the significance of the find immediately and asked for permission to dig there from the Nepali government. He received permission but failed to get a leave of absence.

In 1885 an estate manager named Duncan Ricketts spotted a broken pillar in the terai jungle not far from the place where the Kanakamuni stupa was later found. He reported it to the archaeological survey, but his report went unnoticed. Inspired by an article written by Waddell, Samsher Rana, the governor of the district, decided to investigate the broken pillar. Studying all these reports, Alois Führer, chief of the archaeological survey of the area, rushed to locate the pillar, only to find that Ricketts and Rana had already started digging. At the site, a slightly mutilated pillar extended about ten feet above ground. Excavations revealed it to be a monolith 24′4″ high—standing upon a masonry platform and bearing, about 9′8″ above the base, a well-preserved inscription of five lines. The inscription clearly established the spot as the birthplace of Shakyamuni Buddha, and that the pillar had been erected by the Mauryan king Ashoka in the year 249 BCE. Vincent Smith placed two of his civil service officers at the site to continue the investigation. Further confirmation that this was indeed the site was found five months later when these officers recovered Mayadevi's sculpture from a nearby temple, persuading the priest with a substantial amount of money. The Mayadevi stone was being worshipped as a Mother Goddess every day with water, flowers, and vermillion. The temple is still there on the boundary of the garden and enshrines a Shiva lingam.

U Thant, during his term as Secretary General of the United Nations, visited Lumbini on pilgrimage in 1967. He was so impressed by the serenity and sanctity of the area that he suggested to King Mahendra of Nepal that Lumbini be developed as an international pilgrimage and tourist centre. In 1970, with Thant's help, the International Committee for the Development of Lumbini was constituted with fifteen member nations.

In 1978, a master plan was drawn by Japanese architect Kenzo Tange. The master plan covered an area one mile wide and three miles long, extending south to north with the *pushkarini* at the southern end. The huge park was to be known as Lumbini Development Zone. All the countries and groups dedicated to Buddhism were requested to build monasteries in the area. Gradually, a number of nations and groups came forward with plans and started occupying the plot. Visitors from different countries came and stayed in their monasteries. Lumbini again became a popular pilgrimage place, as it had been 2,000 years ago. (*To be concluded*)

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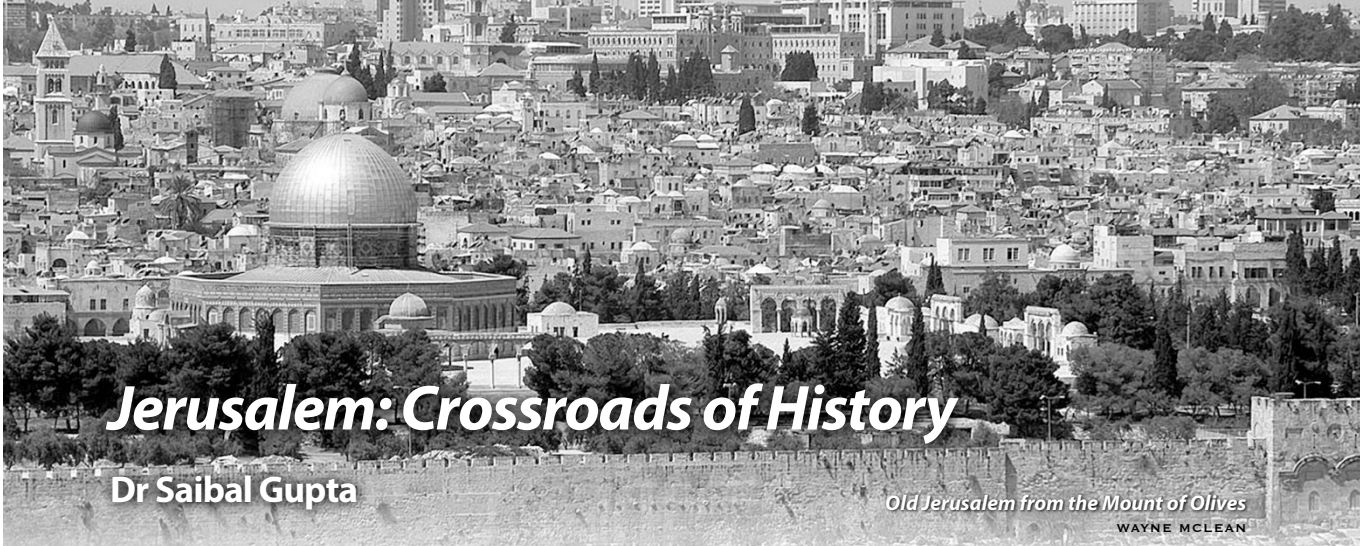


Jerusalem: Crossroads of History

Dr Saibal Gupta

Old Jerusalem from the Mount of Olives
WAYNE MCLEAN

One day the editor of *Prabuddha Bharata* calls and asks me to write about Jerusalem. 'Why me?' I ask. He says, 'Because you have been there.' I say, 'That was a long time back, actually in 1980, and I do not remember much. I didn't have time to visit all their holy places since I went for a medical conference.' I do not add that I was not interested in religion then. To this he replies, 'Then go again.' This is a shock. I say, 'Are you serious? It will cost a lot of money as the country is very expensive, and I do not know anybody there.' But he is sure. I am piqued and say, 'Let me see, though I see no possibility of going.' I put the thought behind me. If this is a divine wish then let it be so, that's not my worry.

My daughter and grandchildren are planning to visit me during Durga Puja, and I am eagerly looking forward to that. In the meantime, the Israeli army invades Lebanon. I watch the war on television and cannot help thinking that this is what Sanjaya did in the Mahabharata—a live account of war is a reality now. Yesterday's mythology is today's reality. Has humanity ever achieved anything that it has not dreamt of sometime in antiquity? I also tell myself, 'There goes my visit to Israel.'

Eventually, my daughter informs me that they cannot come. I am disappointed. But my son makes an interesting offer: 'Why don't you join us on a trip to Egypt? We've got a cheap pre-season package. You come with us.' 'What a coincidence!' I think, even as I tell aloud, 'My journey will depend on whether I can visit Israel as well.' Now it's my son's turn to be surprised. 'Why Israel? What for? There is a war going on there.' I smile. 'Do not worry about that. Ask your travel agent to call me.' The travel agent thinks I am mad. 'You want to go to Israel, sir? It is war out there, no visa available. No flight plan will go to Israel and return through an Arab country—the two tours cannot be joined.' I assure him, 'Don't worry, the war will stop, the boundaries will open, the visa will be given. It is still more than a month away.' He keeps coming back with one impossible situation after another and I keep encouraging him. At last I procure e-tickets for each individual flight, the agent makes some circuitous plans, and I get the visa.

I have to show hotel vouchers to get a visa for Israel, but the hotels are full and too expensive, it being Yom Kippur season. I decide to take a wild chance and send an e-mail to an old assistant, Dr Probal Ghosh, who is now a professor of cardiac surgery in Austria and has an Israeli wife. To my surprise he replies from Israel that he is now located there but sadly will be away during my visit. He introduces me to a senior colleague of his, Prof. Joseph B Borman, Emeritus Professor of Cardiothoracic Surgery at Hebrew University Hadassah Medical Center in Jerusalem, who welcomes me with open arms, inviting me to deliver a lecture (which fortunately does not happen) and books a reasonably priced guest-house accommodation for me. Meanwhile, the flight schedule has to be changed, and that means that Probal will also be there during my visit. I am apprehensive that I

might get turned away from Israel or Egypt. Israeli security officers at Mumbai airport grill me for an hour as to the real purpose of my visit. I have no lecture material and I say my words are enough material. I cannot say 'religion', and create more confusion, but I keep smiling and am fast and honest with my replies to all questions—each repeated thrice, including the name of Shoshona, Probal's wife. Every article of my baggage is individually screened with special detectors and, still puzzled, they watch me all the way to the plane.

Joe and his wife Ruth (we are already on first name terms) are a deeply religious, liberal, and learned couple. Joe leaves all work and walks with me for two days non-stop through the streets of Jerusalem showing and explaining all the important sites. He has already made detailed plans and prepared notes and maps for me so that we can cover all of Jerusalem in two days. No word of gratitude is enough for them. The third day is free for Probal and Shoshona.

Peering through the Haze of Time

I find the route of my journey significant, backtracking the route Moses took from Thebes (present day Luxor) in Egypt to the Promised Land of Canaan. It was in about 1300 BCE, at Kadesh, that the Egyptians and Hittites fought a terrible battle for control of Canaan; both suffered terrible losses, but both claimed victory. The Egyptian Pharaoh in this war was Ramses II, in whose time Moses led the Israelites out of Egypt. Both armies were exhausted after the battle and left the land of Canaan almost empty, leaving a window of opportunity for the Israelites to populate the land and eventually to build their oldest kingdoms under Saul, David, and Solomon. After Solomon the kingdom was divided into two—Israel and Judea. Jerusalem remained the capital of Judea for 400 years, while Israel had many capitals. The reign of relative peace lasted a few centuries, and then enemies became powerful again, Egypt in the south and Assyria and Babylon in the northeast. In 732 BCE, the Assyrians conquered most of Israel, and in 722 BCE King Sargon II of Assyria captured Samaria—Israel's capital—and exiled the inhabitants, thus sealing the annihilation of Israel. Judea hung on for another 135 years, fragmented by wars and Assyrian occupation, until Babylon, under Nebuchadnezzar II, defeated the Assyrians and conquered Jerusalem in 597 BCE. After two rebellions, Nebuchadnezzar destroyed Jerusalem in 587 BCE, razed Solomon's temple to the ground, and banished the Jews to Babylon and other places. Later, Persia defeated Babylon, and Cyrus II of Persia allowed the Jews to return from Babylon. Some, but not all, did return, and they began to rebuild the temple in 536 BCE, though not to its original grandeur; this was the second temple. Uneasy times continued under Persian and then Greek rule. Alexander conquered the whole area in 333 BCE but did not destroy it; and then the Egyptian Ptolemies followed by Syrian Seleucids ruled. Romans occupied the land around 63 BCE, and Herod became king in 37 BCE. He was a strict king and a great builder; he rebuilt Jerusalem and extended and ornamented the temple. The internal squabbles, politics, and revolts continued, with repeated invasion of armies from Rome, until Titus, with 60,000 Roman soldiers, sacked Jerusalem in 70 CE and razed the second temple to the ground. Some stability was achieved during the Byzantine Empire, but then came the Arab, Turk, Mamluk, and Ottoman invasions, punctuated by the Crusades, and finally came the British with the Palestine Mandate. Israel lies in the route of armies from Asia Minor to Egypt and vice versa, and every army on this route has trampled that land. As a result the Jews were scattered until the formation of modern Israel, and strife continues to date.

In the middle of all this, Jesus Christ was born in Judea. According to Coptic tradition, the child Jesus journeyed along this route to Alexandria with Mother Mary and also with John the Baptist, and revealed the first miracles initiating the establishment of the Coptic Church in Egypt. This is the holy land for three great traditions, though India is not part of its history except by being a distant source of some of the philosophies of the time. Then why have I been sent here? Is it to scour the

ground and find my footsteps from a distant past, to be a non-partisan observer amidst all these wars and still be able to feel the divine presence, or prepare to be a protagonist of the future? The canvas is too large to grasp or make meaning out of. I can only try my best and ours is not to reason why.

Jerusalem

I land at Ben-Gurion Airport at 4 a.m. on 26 September 2006. I go out of the airport, this time uneventfully, and look for a share taxi, *sheyrut* in Hebrew. It is a minibus holding 10–12 passengers with space for luggage at the back. The journey becomes long as the driver takes in one passenger for Tel Aviv, causing protests from other passengers. At about 6.30 in the morning I get dropped in front of my guest house in Jerusalem. I get a small room with a bath. A message from Joe is waiting. I ring him and we decide to meet at 10 a.m., allowing me two hours to doze. I have not slept for 24 hours.

A Panoramic View · Joe comes punctually at 10 and we walk up the hill past an old kibbutz that has now been converted into residential flats and a large public building. This is how most kibbutzim are today, as that particular phase of development of Israel is coming to end. The old olive trees are still skirting the wire-fenced boundary. We walk up to the southern ridge of the deep valley with sloping sides that is Old Jerusalem. The Haas Promenade beside the road affords a fantastic view of the entire old city beyond the Valley of Kidron. Behind us, at the summit, were the old offices of the British administration of Palestine; that area has now been converted to the United Nations enclosure. This area is known as the Hill of Evil Counsel, not because of what they are doing now, but because this was the place where the Sanhedrin, the supreme Jewish council and court of justice, sentenced Jesus to death. In front of me, far down on the western ridge, a triangular piece of land rising gently upwards, now largely bare, is the old city of David, which could be approached and conquered only from the north. At the bottom of the slope is the Gihon spring that supplied water to the city; it still flows. Originally the spring was outside the wall of David's city. It was later included in the city walls, and the water from the spring flowed into Solomon's Pool and to Siloam Pool further down, protected from invaders. Further up the slope were Solomon's city and the area of the Temple Mount or Mount Moriah, on which stands the golden Dome of the Rock. A little in front of that is the dome of the Al Aqsa mosque. The steeple of the Church of The Holy Sepulchre is close by on the other side. The entire western hill is densely built up. In olden times a shallow central valley ran through; it was filled up with debris from the city and built up. The Arab quarters to the northwest can be easily picked out by their crumbling houses—compared to the Jewish and Christian quarters extending to the eastern ridge. On a higher ridge further away are the modern buildings of the Hebrew University. The panorama is breathtaking, encompassing five thousand years of history of peoples and religions that have shaped much of the world. We turn left on to a wide concrete walkway that goes over the eastern ridge, flanked by flowering trees and following the curvatures of the hill. It goes past the Franciscan convent of Santa Clara, known in English as Saint Clare, coworker of St Francis of Assisi. I have a deep regard for St Francis, and it would have been nice to see the convent and meet the nuns ... but that was not possible. The walkway is known as Derech Gabriel. At the end it meets Naomi Street, where Joe has his residence. He takes his car out and we continue our journey to the Holocaust Museum.

Holocaust Museum · This is a beautiful architectural creation. It is in the form of a large boat almost hanging in air. Through the centre of the length of the building runs a corridor, which is narrow at one end and gradually widens at the other as it rises up. On both sides are halls depicting the horrors of the Nazi era in large photographs, descriptions, and slides. As one finishes travelling through the halls, one comes out at the raised end open to the sky and light and providing a nice view. It is symbolic of the journey of the Jewish nation. Though I was not told so, I thought that the build-

The Tower of David, above; the Western wall, right; model of the Temple in Herod's time, below

ing was designed as an ark, simulating the ark that was kept in the central sanctum in Solomon's Temple, the ark that has never been found. I forgot to ask about it, as I was numb from sleeplessness and walking. The museum contains pictures and artefacts not only of the Nazi era but also on anti-Semitism in the rest of the West. These latter exhibits are very muted, probably to spare the feelings of present-day friends.

We take a light lunch at the cafeteria and, seeing that I am falling asleep, Joe decides to take me back to the guesthouse. On our way we pass an area called the German colony that has rows of small restaurants. It is close to my place, and Joe advises me to go there at night for dinner as the place becomes festive at night. After catching three hours of sleep, I walk down at night and find the place very jolly with lots of young people eating and chatting. I order lamb chops in kosher style. The crowd is friendly and polite but not overly curious. Modern Israelites are healthy, handsome, and jovial.

Next morning, Joe is unexpectedly busy. I take a taxi to the Jaffa Gate to see the Tower of David and the museum. I get down from the taxi but cannot pay in dollars. A shopkeeper, seeing an Indian, kindly exchanges ten dollars, which pays for the taxi and entrance to the museum. I take a picture of the surroundings and a police officer driving past warns me sternly not to take pictures. The area is notorious for bomb blasts—I get evidence of this after I come out of the museum and Joe catches up with me. A small package is lying in the middle of the road and a police van rushes in, siren hooting, and in a few seconds the crowded area is empty. Joe says a robot will be released from the van to grab the package. Unfortunately for me, the police see that it is innocuous and drive off, and the robot does not come out.

The Tower Museum depicts the history of Jerusalem from prehistory through all the invasions and different cultures at different periods, with wall carvings, statues, and models of people and buildings. Two exhibits interest me most: the Temple at Herod's time and the Dome of the Rock—the first because it was grand to see the place where Jesus preached and the corridors he walked, and the second because I was not allowed in.

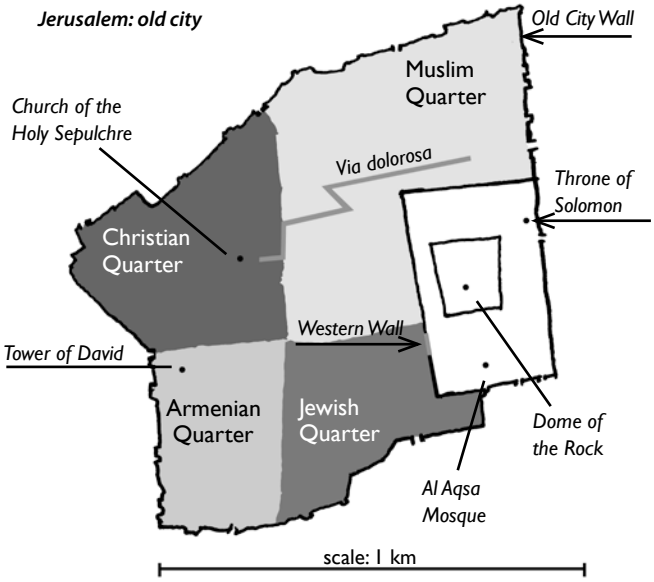
Old City · Leaving the Jaffa Gate, we walk towards Joe's parked car and pass through a rich neigh-

WAYNE MCLEAN

Prof. Joseph Borman, right, with the patriarch of the Jewish family shop in Old Jerusalem

bourhood with opulent apartments and semi-detached houses with private gardens. They are all shuttered and belong to rich non-residents who come during festival times. Jerusalem is a pleasant place to live, with nice weather, wide main roads, and a lot of greenery. We drive to reach one end of the old city and walk in. The old city is a maze of narrow lanes with shops with common walls lining both sides selling all kinds of objects. The Via Dolorosa is one of these lanes. During festival times and holidays the area is packed with people. There are some old residential buildings of proud possessors, and shops of Jews and Arabs and some Christians too. We enter a small shop selling pea pakoras with sauce and hand-made bread. It is delicious. We enter a Jewish shop, an old man is sitting inside. Joe knows him as he had operated on his daughter who now lives in the US with her family. The old man says that though he has roamed the world and done business everywhere, including India, he has never left Jerusalem and this old shop of his family. The shop sells religious memorabilia and other art objects. The old man's son treats us to coffee, Joe speaks to his patient in the US on the phone, and I take a picture of Joe with the patriarch. We enter another shop to recharge the camera battery. It is owned by an Arab, and he deferentially leaves his seat to Joe to go upstairs for the rapid charger, requesting him to look after the shop. He comes back, and while we wait he blames the British for creating divisions between communities both in Israel and India by their divide-and-rule policy. Joe is silent. To keep the discussion going I say that a British journalist has recently written that if one could go back and withdraw the Balfour declaration there would be peace. The Arab looks happy, but Joe adds that there would be no Israel then. I quickly add that the creation of Israel was necessary for humanity. I should have added that the British also created Transjordan, where Jewish immigration was explicitly banned. The Arab says that religious wars are continuing and Joe replies that religions should not divide nations. The Arab shakes Joe's hands in seemingly happy agreement and tells me that he has seen the professor often but never talked to him, and that he is a nice man. After this mini-summit, as good or bad as the big ones, we part as friends.

Western Wall · A little later we enter a large



paved courtyard. One side of the courtyard is the wall of the first temple, which used to be called the Wailing Wall, a name given by outsiders. Today the Israelis call it the Western Wall, and they no longer wail. The state of Israel has come of age. In 1980 I saw a deep trench dug all along the wall to find its foundation and people reading prayers or crying behind a protective barricade. The trench is no longer there, and people touch the wall and pray and stick their prayers written on small pieces of paper in the crevices between the stones, but in the main there is an air of festivity and family parties, not sorrow. The men's and women's sections are separated by a low partition. We wear paper skullcaps kept in a bucket for going close to the wall, and I touch and do pranams at the wall. I feel happy and pass my hands over the large three-thousand-year-old stones, particularly those with fine grooves along the margins that are of the First Temple. Others are later fillers. Most of the wall is like this and goes till the bottom of the foundation, as much below as above the ground. The uppermost few layers of small blocks with some cementing material are from the Second Temple. There are orthodox Jewish men with long plaited sideburns hanging out of their black hats. There are also a few children with similar dress. There are people with black dress and hat but no plaited sideburns, and Joe explains that they are conservative people. Most people are dressed in ordinary casual clothes.

Dome of the Rock · Above the wall one can see the golden Dome of the Rock. It was built during the reign of Caliph Abd al-Malik ibn Marwan and completed in 691 CE. It is not a mosque but a *mashhad*, a shrine for pilgrims. It is an octagonal structure built in Byzantine style and is a place for meditation. The hill is one of the holiest places in both religions, Judaism and Islam. On the Temple Mount and in front of the Dome is the Al Aqsa mosque, where prayers are held. In 1980, as far as I can remember, I did not hear the muezzin's call to prayer, and I saw a silent line of Muslims entering the mosque surrounded by armed Israeli guards that are not in evidence today. Joe told me that the prayer call is given now, and I have seen loudspeakers on minarets. The Jewish festival of Yom Kippur, the Day of Atonement, is round the corner and so is Ramadan.

The Prophet Muhammad accepted the fasting of Yom Kippur while he was in Medina and extended it to one month for Muslims. Much is common between these two religions. They have the same roots—both originate from Abraham. On that rock God called on Abraham to prove his loyalty by offering his son Isaac as a burnt offering. Abraham prepared a pyre, laid Isaac on it, and drew a dagger to kill him—when God stayed his hand and declared him as the chosen one. The Prophet Muhammad one night in a dream rode a winged horse from Mecca and reached the rock and from his seat on the horse was lifted to heaven to meet God and receive his blessings and command as the chosen one. The story does not end there. The Crusaders camped here when they came to Palestine, and all the Knights Templar churches in Europe have the same octagonal structure as the Dome. The vista is imposing and awe-inspiring, with its long and remarkable history.

After the first major defeat of Byzantine forces to the Arab army in 636 CE, Jerusalem was still holding out, and its ruler Sophronius sent a message to Caliph Umar I in 637 that if he promised to spare the Christian and Jewish inhabitants of Jerusalem, as they did in Damascus in 635, they would surrender. The Caliph accepted the proposal and came to inspect the city to see that his promise was kept. As he was inspecting the Church of the Holy Sepulchre, the muezzin's call to prayer sounded. Rather than pray there itself, he hurried out of the church—lest his followers, in their enthusiasm, destroy the church to construct a mosque there—and went on the open ground outside to face Mecca and perform his prayers. It was there that the Mosque of Umar was built. Today, only a wall separates the two sites; the entrances to the Mosque of Umar and the Church precincts are side by side. Umar I was the first Caliph to take the title of 'Commander of the Faithful'; he died in 644. (*To be concluded*)

The Hajj: Unity in Diversity

Swami Gangananda

Sri Ramakrishna said that everyone can realize the divine, even though they are travelling along different paths. The major world religions are these different paths, and they do indeed differ from one another in many details. They have, however, some features in common, and one of the most obvious of these is the practice of undertaking pilgrimages. In Christianity there are pilgrimages to the Holy Land, where Jesus Christ was born and was crucified; in Judaism there is the pilgrimage to the wall of the temple in Jerusalem; in Hinduism there is the Kumbha Mela and pilgrimages to places associated with Rama, Krishna, and other deities. And in Buddhism there is the pilgrimage to Bodh Gaya, where the Buddha became enlightened. In Islam the pilgrimage or hajj is compulsory for all Muslims who have the means and ability to travel to Mecca. It attracts millions of pilgrims every year and brings together Muslims of all nations into one brotherhood of faith.

God said in the Holy Quran, in Surah Al-Imran (The Family of Imran), verse 97: 'It is the duty of all men towards God to come to the house as a pilgrim, if he is able to make his way there.'

The five pillars of Islam are known to be the following: (i) Faith or belief in the oneness of God and the finality of the prophethood of Muhammad; (ii) The institution of daily prayers; (iii) Concern for, and almsgiving to the needy; (iv) Self-purification through fasting; and (v) The pilgrimage to Mecca for those who are able. The subject of the present essay is the fifth: Al Hajj, the pilgrimage to Mecca.

The pilgrimage to Mecca has the effect of bringing Muslims from different parts of the world together. As the dress worn is the same for everyone, there is no distinction between the poor and the rich, the nobleman and the commoner, the scholar and the simple man. There is a feeling of brotherhood, sharing a common faith and doing the same things together. It also produces a feeling of solidarity and strength. The body of pilgrims is no longer a collection of separate individuals, but a single unit, like a battalion of soldiers. Differences of colour and race are set aside. All are one in a common faith.

When one arrives in Mecca, one goes straight to the Kaa-

'I am forgiving and merciful to My servants'

O pilgrims on the way to Mecca,
where are you?
Come here: your Beloved waits.
O please, come!
Today like every other day we are
exhausted;
Don't open the door of thought,
come, play your rebab.
There are hundreds of ways to pray,
To kneel and kiss the ground,
For the one who turns in worship to
the Face of the Friend.

—Neyi Osman Dede

For truly, God invites to the Abode of Peace.
Listen, come speedily, O seeker of felicity,
for now is the time of grace and the opening of the door.
And you who are not a seeker, come too,
that you may gain the gift of seeking felicity
from this faithful Friend.

—Jalal ad-Din ar-Rumi

The Prophet's Hajj

The Prophet put himself into a sacral state, and the Muslims followed his example. Everyone shed his clothes and put on two pieces of unsewn white cloth, the simplest of all garments. In this way, they expressed the absolute egalitarianism of Islam in its most eloquent and highest sense. Muhammad turned to God with all his heart and mind, praying: 'At your service, O God! At your service! You have no associates! At your service, O God! Praise be to God! Thanks be to God! …' And all the Muslims repeated these words after him. Deserts, valleys, and mountains reverberated with this prayer. … Thus the procession continued on its way to Makkah, its thousands and hundreds of thousands filling the air with the sound of this prayer. …

The procession continued and reached Makkah. … Upon arrival, the Prophet, followed by the Muslims, hastened to the Ka'ba. There, the Prophet went to the black stone and kissed it. Then he circumambulated the holy sanctuary seven times. … He then proceeded to the sanctuary of Ibrahīm where he performed a prayer. Returning back to the black stone, he kissed it once more and then left the temple area for the Mount of al Safā, and from there performed the *Sa'y* between that mount and the mount of Marwah. …

On the eighth day of Dhū al Hijjah, the day of al Tarwiyah, Muhammad went to Minā and spent the day and night in that locality.

ba, the oldest mosque of the Islamic world, dressed only in *ihram*—dhoti and chadar, so to say—and one leaves one's shoes at the entrance. The place at the time of hajj is not only crowded but overcrowded. One proceeds to the corner where the black stone is fixed in the wall of the Kaaba. From there one starts to circumbulate around it, chanting all the time the *talbiyah* mantra, which begins '*labbaik allahumma labbaik* ...' and which means 'Here I am, O Allah! Here I am in Thy august presence; there is no associate with Thee, here am I; surely all praise is Thine and all favours are Thine and the kingdom is Thine; there is no associate with Thee.'

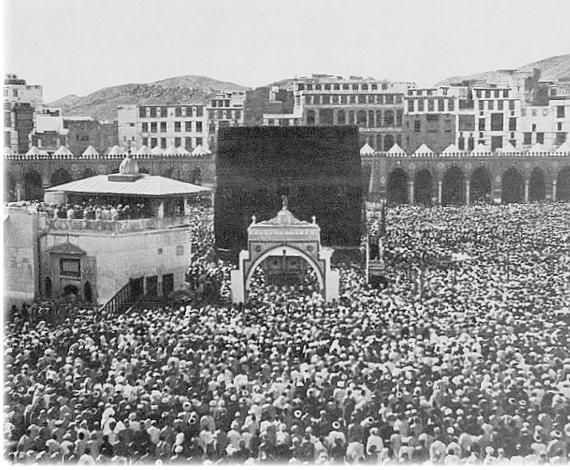
One starts to chant the moment one enters and continues to do so till the ritual ends. One is so overpowered with the mass of people chanting and moving, all of them dressed in the same simple white dress; and one does not know who the person beside one is, a king or a labourer. One can only know that he is a man or she a woman, since the women are dressed fully in white and only the face and hands are uncovered. Contrary to the normal custom, where the women have to cover their faces, the Kaaba is the only place where women move about with uncovered faces, because here one has to maintain the idea that humankind consists of brothers and sisters, of sons and daughters, of fathers and mothers. Everyone is so busy repeating the mantra with full concentration and devotion that one feels one is not on the earth. The atmosphere is so surcharged that one cannot control oneself from weeping out of joy or out of awe. Here one feels effectively the famous Islamic brotherhood and the unity of humankind—only here. Here I felt effectively the famous Vedantic statement that humankind is one. Here I felt effectively I am nobody and only God exists. Here I felt effectively I am one with this mass of humankind. It is a very strange and subtle feeling which one cannot describe in words: to feel so full of love for everything on this earth. It is a strange peace of mind and joy of the heart. It is here where one forgets completely the normal mundane world of day-to-day life. No doubt, the crowd is pushing and tossing, but nobody gets annoyed; this pushing and tossing is accepted and there is no stampede in the Kaaba. A stampede might take place in other places elsewhere, but not in this holy place. It is impossible to describe this unique atmosphere in words; one has to experience it. And such experience is never forgotten!

Now I want to mention something else. The Kaaba is never closed: it is open throughout the day and night, three hundred

and sixty five days a year, because the Kaaba is a pilgrimage place and has to be open all the time. People come to Mecca throughout the year for the purpose of the great hajj and also for the smaller hajj, known as the Umrah Hajj, which has far fewer restrictions than the great hajj.

Then there is another unwritten rule that every person who goes to the big hajj should visit the holy city of Medina, the city of the Prophet Mohammed. Though the Prophet was born in Mecca and lived there until the age of fifty three, he had to flee it because of persecution. He went to Medina, which was called Yathrib at that time. So Yathrib became his real city and got the name Medina al-Rasul, where he died and was buried in his own house, which has now become a place of pilgrimage. His house was attached to his mosque, and in course of time both have become one unit. Now the tradition is as follows: everyone who makes the big hajj to Mecca either goes first to Medina and then to Mecca, or after finishing the big hajj at Mecca then goes to Medina. So everyone has to be in these two places, Mecca and Medina, at the time of the big hajj.

One thing I want to mention: the atmosphere in Medina is so sweet—one cannot forget it. In Medina one finds oneself finally at home, like in Jayrambati, the home of Sri Sarada Devi; one feels one is with Mother and under Mother's protection. Mecca has some sort of hectic atmosphere because of the extreme crowd and because of the engagement in performing the rituals; in Mecca one forgets one's personal identity, feeling that God is the only Truth. In the city of tents like Arafat and Mina and Muzdalifah one is surrounded with all kinds of people coming from different countries. Though the language of the neighbour might be foreign, the prayers are the same, observed five times a day; the same holy Quran is read everywhere in its original language, Arabic. The common life for many days in dhoti and chadar creates a particular atmosphere. Your neighbour in the next tent may be from China, or Russia, or India, or Canada, or any country in Africa; he may be black, white, yellow, or brown in complexion; but all are pronouncing the same prescribed prayers. During these days, living this simple life, one feels literally that humankind is one family. Though the Islamic world consists of 'seventy-two' different denominations and sects like Sunni, Shia, Qadiani, Wahhabi, and Bohra, the ritual of the hajj and the ritual of the five daily prayers are the same for all. One asks oneself, after finishing the hajj, why can we not live in the world in the same way? PB



There, he performed all the prayers incumbent during that period. The following day, Muhammad recited his dawn prayer and, at sunrise, proceeded on his camel, al Qaswā', to the Mount of Arafāt, followed by all the pilgrims. As he ascended the mountain, he was surrounded by thousands of his companions reciting the *talbihah* and the *takbīr*. … When the sun passed the zenith, he ordered his camel to be saddled, and rode on it until he reached the valley of 'Uranah.

It was there that he, while sitting on his camel, delivered his sermon in a loud voice to his people. … 'O Men, your lives and your property shall be inviolate until you meet your Lord. … Remember that you will indeed meet your Lord, and that He will indeed reckon your deeds. … Learn that every Muslim is a brother to every Muslim and that the Muslims constitute one brotherhood. …'

When the Prophet finished his sermon, he dismounted and waited until noon, at which time he performed both the noon and the midafternoon prayers. He then mounted his camel and proceeded to al Sakharāt. …

The Prophet left 'Arafāt and spent his night at Muzdalifah. In the morning, he visited first the sanctuary of al Mash'ar, and then Minā on the road to which he threw pebbles against the symbol of Satan. … The Prophet then shaved his head and declared his pilgrimage completed.

—M H Haykal, *The Life of Muhammad*

Philosophy of the Physical Sciences

Dr N Mukunda

(*Continued from the previous issue*)

The other major twentieth-century development in physics was the discovery of the quantum nature of phenomena and the formulation of quantum theory. In many ways quantum theory is more profound in its implications than the relativity theories. Quantum theory arose out of a clash between Maxwell's electromagnetism and the principles of statistical physics, which, as we saw, provide the foundation for thermodynamics. We can only try to convey why quantum theory has had such a profound influence on the philosophy of science, and cannot venture into much technical detail. The view of the nature of light has swung back towards Newton's corpuscular conception—with important and subtle differences—expressed in the concept of the photon. As for the mechanics of matter, the Galilean-Newtonian picture and description of motion has given way to a much more mathematically elaborate and subtle complex of ideas, which goes by the name of quantum mechanics. Material particles no longer travel along well-defined paths or trajectories in space in the course of time. Their evolution in time can only be given in the language of probability—that is, all the predictive statements of quantum mechanics are probabilistic in nature. The quantitative description of physical properties of systems undergoes two important changes in quantum mechanics: on the one hand, many physical variables show a quantization of the values they can possess—thus, typically, energies are restricted to a discrete set of values rather than a continuum. On the other hand, the physical variables of a given system have such mathematical properties, or are of such nature, that we cannot imagine that each of them always possesses some numerical value which, if we so wish, can be revealed by a measurement. According to Bohr, we can never speak of a quantum system as having such and such a value for such and such a physical property on its own, independent of our measurement of it. And with a pair of so-called incompatible properties, an effort to measure one of them automatically precludes any effort to simultaneously measure the other as well.

We have to learn to use language with much more caution or circumspection when speaking of quantum phenomena than was the case earlier. Many classically meaningful and answerable questions become devoid of meaning in the quantum domain. The kind of 'visualizability' of physical systems in complete detail which was possible in classical physics is denied by quantum mechanics.

From the perspective of Kantian thinking, quantum mechanics has made us give up strict determinism, substituting a kind of statistical causality for it. On the other hand, it has supplied the basic theoretical concepts for all of chemistry, for atomic, molecular, nuclear, and elementary particle phenomena, and for all processes involving radiation. The old law of the permanence of matter has gone, as it can be converted to radiation, and vice versa. Up to the present time, the agreement of quantum mechanics with experiments has been outstanding—nature does seem to behave, in many situations, in classically unreasonable ways.

The Reinterpretation of Kantian Ideas

It is understandable that when physics advanced into new territories involving the very fast, the very large, and the very small—as judged by everyday standards and experience—some of the Kantian synthetic a priori principles had to be given up. As we said, Kant's ideas were rooted in the physical science and Galilean-Newtonian tradition of his

time; he could not have foreseen the revolutionary developments that were to come later. This much is natural. However, what is remarkable is that the 'problem' with his philosophical basis for physical science has been illumined during the mid-twentieth century from a rather unexpected direction—namely, biology and the theory of evolution by natural selection. One might wonder if, apart from having to give up particular synthetic a priori principles as a result of advances in physical science, the very concept of such principles has also to be given up. After all, one might ask how principles supposedly known in advance of experience could necessarily constrain our later experiences. The answer to this question involves a subtle reinterpretation of Kant's notions, using ideas not available to him. This fascinating development—the work of Konrad Lorenz—leads to a better understanding of the entire situation, and has been eloquently presented by Max Delbrück.

The basic contrast is between the slow evolution of species governed by the force of natural selection, involving innumerable generations and enormous stretches of time; and the relatively short life span of an individual member of the species. In the former process—phylogenesis—those abilities thrown up by random genetic changes which are beneficial to biological survival are retained and refined. The others are discarded. Those retained include the ability to recognize the most important physical features of the world around us at our own scales of length and time, because it is just these scales that are relevant for biological evolution. Thus, gradual evolution of species governed by natural selection develops these useful capacities, and then endows each individual with them at birth. From the point of view of the individual's development over a single life time—ontogenesis—the capacities in question seem to be given ready-made at birth, in advance of experience; they seem to be a priori. But this argument shows that from a longer time perspective there is nothing a priori about them, as they are the fruits of experience of the species. In Delbrück's words:

> It appears therefore that two kinds of learning are involved in our dealing with the world. One is *phylogenetic* learning, in the sense that during evolution we have evolved very sophisticated machinery for perceiving and making inferences about a real world. ... Collectively and across history, the human species has learned to deal with signals coming from the outside world by constructing a model of it. In other words, whereas in the light of modern understanding of evolutionary processes, we can say the individual approaches perception a priori, this is by no means true when we consider the history of mankind as a whole. What is a priori for individuals is a posteriori for the species. The second kind of learning involved in dealing with the world is *ontogenetic* learning, namely the lifelong acquisition of cultural, linguistic, and scientific knowledge.

The one added subtle point is that species evolution endows each individual with the capacity to acquire knowledge about the world outside, but not the knowledge itself. This has to be acquired through the experiences of infancy and childhood, and indeed is a lifelong endeavour. The difference between capacity and content is profound.

In this way Kant's conceptions acquire new meaning. We also learn that the biologically evolved Kantian a prioris can only be expected to work for a limited range of natural phenomena, and our 'sense of intuition' is based on this range alone. We should therefore not be surprised if Galilean-Newtonian principles do not extend beyond this limited world to the world of the very fast, very large, or very small. But the truth is that our intuition is so much a part of us that it is very difficult to escape from or transcend it.

Some Important Features of Physical Science

Returning to physical science, there are several important features it has acquired, some more recently than others, with significant philosophical implications.

The descriptions and understanding of natural phenomena given by physical science are always

developing or evolving, always provisional and never final. Since this is so very important, let me cite several examples which lead one to this sobering point of view. There have been occasions in the past—with Lagrange in the eighteenth century, and William Thompson (Lord Kelvin) at the end of the nineteenth century—when the feeling was expressed that all the laws of physics had been found and nothing remained to be discovered. Our experiences since then have made us much more modest in our claims. We both recognize the existence of limits of validity for every physical theory or body of laws, even for those yet to be discovered; and admit that future experience can always lead to unexpected surprises. In this important sense nature is inexhaustible: we will always be learning from her. The lack of finality of every physical theory in this sense means that we can only continually increase the accuracy of our description of the phenomena of 'the real world out there', but can never say we have been able to describe them exactly as they are, or have reached true reality.

Our first example to drive these points home is connected with the Newtonian description of universal gravitation as an instantaneous attraction between any two mass points governed by an inverse square law. Before Newton, the prevailing idea was Descartes' theory of vortices—all physical actions or influences were by contact alone. Newton's law was a major change, giving rise to the concept of action at a distance. Privately, Newton himself expressed uneasiness at what seemed an unreasonable aspect of his law—how could material bodies influence one another instantaneously across intervening empty space? But his law worked, its quantitative predictions agreed with experience (at that time!), and with the passage of time the idea of action at a distance became gradually accepted. Even the initial laws of electricity and magnetism—in the static limit—were expressed in such a framework. The return to action by contact via an intervening field came about in the case of gravitation only in 1915 with Einstein's theory of general relativity.

The next example concerns the nature of light. As we have discussed earlier, the corpuscular viewpoint championed by Newton was replaced by the wave concept after Young's experiments on interference. After Maxwell's classical electromagnetism arrived, light was identified with the propagating waves of Maxwell's theory: now one 'knew' what the waves were made of. But when Einstein developed the photon concept in 1905, our understanding moved once more in the direction of the corpuscular viewpoint, involving a subtle combination of wave and particle concepts which can be properly expressed only in the language and imagery of quantum mechanics. At none of the above stages of development could one claim that one had finally understood the real nature and properties of light. It was always a movement towards improved understanding.

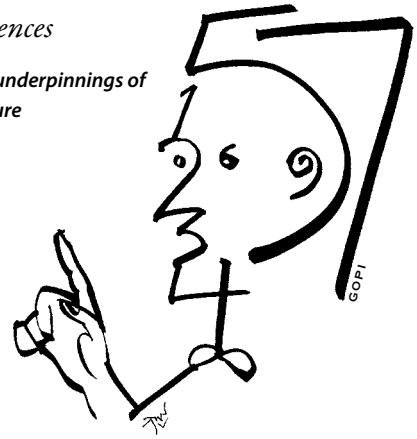
Our third example concerns the explanation of the spectrum of the simplest atom in nature, hydrogen. Bohr's 1913 theory was the first breakthrough; it gave the vital clue to the wealth of data in the field of spectroscopy. Spectral lines corresponded to transitions of electrons between atomic states with various discrete energies. His model for the hydrogen atom was able to explain the spectral lines of the so-called Balmer series, and also several other series. This vital first step fell within the framework of the old quantum theory. A few years later, Arnold Sommerfeld introduced special relativistic corrections to the Bohr model, and was thus able to explain the so-called fine structure in the spectrum. This was then regarded as a triumph of the existing theoretical framework. But after the advent of quantum mechanics in 1925–6, the 'correct' understanding of the spectrum of hydrogen was supplied by the Schrödinger equation and its solutions. The framework of physical ideas was completely different from Bohr's, but the data explained was the same. Then in 1928, after Dirac had found the relativistic wave equation for the electron, the fine structure came out as a straightforward consequence. After this, the Sommerfeld explanation became a fortuitous coincidence, not to be taken seriously anymore. Almost two decades later, as improved experimental techniques and measurements revealed new and fin-

er details of the hydrogen spectrum—the so-called Lamb shift—one had to go beyond the Dirac equation and appeal to the theory of quantum electrodynamics (QED) for an explanation. This turned out to be one of the triumphs of that theory. Clearly at no stage could we have said that we had understood the origin of the lines of the spectrum of hydrogen in complete detail, or that we had the complete and real truth in our possession.

Turning from physics to mathematics, in the field of geometry we have seen a similar evolution, though over a much longer period of time. As we mentioned earlier, only after almost two millennia was it realized that Euclid's geometry is not the only logically possible system of geometry for space; other non-Euclidean geometries are certainly conceivable and consistent. And after general relativity, the changeable geometry of space-time has become an ingredient in the laws of physics, specifically of gravitation. Today there is talk of the quantum features of geometry, one more step in the continuing effort to understand the natures of space and time.

These examples, and many others, teach us that the problem of what is physically real is a time-dependent one: it always depends on what is known at each epoch in the growth of physical science, and can see dramatic changes at certain points. Concepts like phlogiston and ether seemed essential at certain stages in the history of physics, but were later given up in the light of improved understanding.

The accuracy of observations and measurements and the sophistication of the instruments available for experimental investigation also continually increase, so they too contribute to the transitoriness of physical theories. But it should also be pointed out that at any given time we have trust in certain tested and successful ideas and theories, and keep working with them until we are compelled by new experience to go beyond them; then we modify them or in some cases even abandon them. Thus at the present time we have full confidence that, within their respective domains of validity, Newton's mechanics, Maxwell's electromagnetism, and the nonrelativistic quantum mechanics and its later developments can certainly be used.



Mathematical underpinnings of physical structure

Mathematics: The Language of Nature

Next we turn to the important role of mathematics in physical science. Galileo's remark about mathematics being the language of nature has turned out to be true, at least in physical science, to a degree far beyond what anyone might have imagined. In the eighteenth and much of the nineteenth centuries, as the concepts about the physical universe grew in complexity and subtlety, so did the mathematics used to describe them. The same gifted individuals contributed to both disciplines in these periods—Euler, Lagrange, Laplace, Fourier, Gauss, Hamilton, and Jacobi, to name a few. Thereafter, there was to some extent a parting of ways. The relativity and quantum revolutions in the twentieth century exploited mathematical ideas previously and independently developed purely within mathematics. In any event, there has been a steadily increasing role for mathematical ideas in physical science. In one sense this is connected to the reinterpretation of Kantian ideas sketched in the preceding section. As we move away from the domain of normal daily experience and into unfamiliar realms, it is understandable that our intuition often fails us, and then we depend increasingly on the mathematical structure of physical theory for guidance. Furthermore, the accuracy with which effects can be predicted by modern physical theories, and then checked by experiments, is truly staggering. In Eugene Wign-

er's view, there seems to be no rational explanation for this to be so.

There are some who regard the body of mathematical truths as an independently existing 'continent out there', and the process of mathematical discovery as the result of continual exploration of this continent. However, it is likely that this is a psychological response from some gifted individuals who have made really deep discoveries in mathematics based on a variety of motivations. A more modest and less problematic attitude is to regard mathematics as a human invention, similar to but far more compact and rigorous than language, given that in the first place evolution has equipped us with the capacity to create it. But then the extraordinary degree of detail and verification of physical theories via their predictions—this is what seems difficult to explain, and what Wigner terms a miracle. In Dirac's view, the reason why the method of mathematical reasoning works so well in physical science is along these lines: 'This must be ascribed to some *mathematical quality in Nature*, a quality which the casual observer of Nature would not suspect, but which nevertheless plays an important role in Nature's scheme.'

Another related point stressed by Dirac should also be mentioned. It turns out that in the long run the deductive method is not suitable for physical science. One cannot base one's ideas on a fixed, initially stated, and unchanging set of axioms, and then rely on logic to obtain all possible physical consequences. One may adopt this strategy—inspired by Euclid—to a limited extent to grasp the logical structure of a particular set of ideas in a compact way, but one is bound sooner or later to transcend the confines of such a structure. This has been the case, for instance, with Newton's axiomatic approach to mechanics—witness the changes wrought by special relativity on the one hand, and quantum theory on the other. Such may well be the case with the present highly successful quantum mechanics as well. Turning to Dirac:

> The steady progress of physics requires for its theoretical formulation a mathematics that gets continually more advanced. This is only natural and to be expected. What, however, was not expected ... was the particular form that the line of advancement of the mathematics would take, namely, it was expected that the mathematics would get more and more complicated, but would rest on a permanent basis of axioms and definitions, while actually the modern physical developments have required a mathematics that continually shifts its foundations and gets more abstract. ... It seems likely that this process of increasing abstraction will continue in the future and that advance in physics is to be associated with a continual modification and generalization of the axioms at the base of the mathematics rather than with a logical development of any one mathematical scheme on a fixed foundation.

Looking Back Philosophically

Philosophical insights into and speculations about nature go far back in time; modern science in comparison is very recent. We have followed the growth of physical science from its modern beginnings at the hands of Galileo and Newton, and the impact it had on philosophy in that period. We saw how classical physics seemed to have achieved a kind of completeness at the end of the nineteenth century, after which the relativity and quantum revolutions occurred.

In discussing or evaluating ancient philosophical ideas in the light of knowledge attained much later, a great sense of balance is needed. Such comparisons can easily be misunderstood. On this point, Heisenberg explains :

> It may seem at first sight that the Greek philosophers have by some kind of ingenious intuition come to the same or very similar conclusions as we have in modern times only after several centuries of hard labour with experiments and mathematics. This interpretation of our comparison would, however, be a complete misunderstanding. There is an enormous difference between modern science and Greek philosophy, and that is just the empiricist attitude of modern science. ... This possibility of checking the correctness of a statement experimentally with very high precision and in any number of details gives an enormous weight

to the statement that could not be attached to the statements of early Greek philosophy. All the same, some statements of ancient philosophy are rather near to those of modern science.

It is important to stress, as Bohr particularly did, that science is a social human activity crucially dependent on communication among individuals. Each scientific theory is properly viewed as a human creation. Here is Yakov Zeldovich's expression of this aspect: 'Fundamental science is ... needed, among other things, because it satisfies man's spiritual requirements. Scientific endeavour is a remarkable manifestation of human intellect. It perfects human intelligence and ennobles the soul.'

We have seen how difficult it is to give precise definitions of what is physically real; any statement reflects the state of knowledge at the time it is made, and may have to be revised later. From a philosophical stance, the importance of mathematics in physical science, and the changing ways in which it is used, are noteworthy. In the discussions about quantum mechanics we see the extreme care required in the use of language (not to mean, of course, that we can be careless in other realms!). Again, from a philosophical standpoint, we see that pure empiricism and a purely deductive approach are both limited in scope. We need to combine caution, flexibility, and rigour—all at the same time. Nature is inexhaustible, and only experience hand in hand with reason can guide us to dependable knowledge. These seem to be the characteristics of a philosophy useful for the physical sciences.

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David Bohm and Renée Weber on Physics and Maths

Weber The modern physicist is more like the materialist.

Bohm Basically, except for this tremendous emphasis on mathematics, which is like saying that God is a mathematician. If you emphasize mathematics as much as scientists now do, without any physical picture of matter, you are tacitly saying that the essence of the world is something abstract and almost spiritual, if you really think about it.

Weber Mathematics is pure thought.

Bohm That's right. You won't find it anywhere in matter.

Weber You are saying that even today's physicists who might be least inclined towards anything spiritual are practically forced to assume that it is beyond the material.

Bohm Tacitly, anyway. Physicists may not accept this, but they are attributing qualities to matter that are beyond those usually considered to be material. They are more like spiritual qualities in so far as we say there is this mathematical order which prevails, which has no picture in material terms that we can correlate with it.

Weber Is it an aesthetic principle of something deeper still that makes them hold out for one rather than for three or four ultimate laws? Is it a spiritual drive, without their realizing it?

Bohm It probably is a universal human drive, the same one which drives people to mysticism or to religion or art. …

Weber Feynman said that those who don't understand mathematics don't realize the beauty in the universe. Beauty keeps coming up, together with order and simplicity and other Pythagorean and Platonic categories.

Bohm Order and simplicity and unity, and something behind all that which we can't describe.

—Dialogues with Scientists and Sages: The Search for Unity

The Philosophy of Mathematics

Swami Sarvottamananda

(*Continued from the previous issue*)

The Mathematical Method

Having understood the nature of mathematical concepts, we now need to briefly examine the mathematical method. What is the method by which we arrive at the truth or falsity of mathematical statements?

In a mathematical system, we have axioms, which are facts taken to be obviously true ('If *a* is less than *b*, then *a* is not equal to *b*' is one such axiom—the axiom of linear order), and some non-facts (which we shall call *non-axioms*) by the help of which we prove or disprove theorems. Proving theorems means deriving them from known axioms. If we are able to deduce a theorem starting from these basic axioms, then we say that the theorem is true.

However, proving the falsity of a theorem is different. If we are able to derive a non-axiom from a proposition, then that proposition is false—a *non-theorem.* So, here we go the other way round—we start from the theorem itself, not from non-axioms. Hence proving the truth and falsity of theorems are not mirror processes.

The underlying assumption of this method is that we cannot derive a non-fact from facts. Such a system is called *consistent*. If a system is inconsistent, it is 'trivially complete'; that is, every statement, true or false, is derivable in an inconsistent system. An inconsistent system, therefore, is of little practical use.

Propositional Logic

In the study of mathematical method we also need to study propositional logic. Propositions play an important part in mathematical proofs. What is a proposition? A *proposition* is a statement which is either true or false. Note that there are certain statements which are neither true nor false. For example, interrogatory and exclamatory statements are neither true nor false. Also there is this classic example of a paradoxical self-referential statement, which is neither true nor false:

P: The statement P is false

We have referred to the term *theorem*. Now is the time to define it. What is a theorem? A *theorem* is nothing but a proposition for which there is a formal proof. What then is meant by proof? A *proof* is simply a sequence of deductive steps governed by well-defined logical rules that follow from a set of axioms. An *axiom*, of course, is a proposition that is given to be unconditionally true. The following deduction illustrates the rule of specialization, which is one of the many rules of logic:

All men are mortal.
Socrates is a man.
Therefore, Socrates is mortal

Thus, a mathematical system is a set of axioms and non-axioms with predefined rules of deduction, which are also referred to as rules of inference. The *rules of deduction* or *rules of inference* are nothing but rules that add, remove, modify, and substitute operators and symbols.

Let us try an exercise to understand how the rules of inference work. Suppose we have been given the following rules of addition, removal, and substitution of symbols I and U (the other symbol M remains there as in the starting axiom). The starting axiom is MI, and *x* and *y* are variables:

(i) *x*I → *x*IU (Derive MUUIIIU from MUUIII)
(ii) M*x* → M*xx* (Derive MUUIIIUUIII from MUUIII)
(iii) *x*III*y* → *x*U*y* (Derive MUUU from MUUIII)
(iv) *x*UU*y* → *xy* (Derive MIII from MUUIII)

Now try constructing the theorem MU starting only with the axiom MI using the above rules of inference. Is it possible to derive MU?

The crux of the matter discussed above is that in mathematics, as well as in logic, the operators, the constants, and the functions can all be viewed, as in this example, as symbols which are added, removed, and substituted by predefined rules of inference, without ascribing any interpretation to them. Gödel exploited this fact beautifully in proving his famous theorem on incompleteness.

Is Mathematics a Uniquely Human Activity?

Since doing mathematics involves intricate reasoning and abstract thinking, it is often thought to be a very creative process requiring a lot of intuition. Kant was of the opinion that since mathematics requires human intuition it cannot possibly be done by non-humans. But several later philosophers have shown that it really does not require any human intuition to understand a mathematical proof. Finding a proof for an open research problem, though, might be an altogether different matter—computers have failed till date to automatically generate proofs for even very simple non-trivial mathematical problems. This is not to suggest that proving mathematical theorems is a uniquely human activity incapable of computer simulation—it is simply a matter of selective processing power. Computers cannot distinguish between boring mathematical truths and interesting mathematical results and keep happily churning out one mathematically uninteresting result after another, *ad infinitum*.

Mathematical thinking, in fact, is apparently not unique to humans. Rudimentary mathematical understanding is also seen in other animal species. And, of course, computers are 'doing' mathematics all the time. If one is to argue that finding and discovering mathematical truths rather than understanding proofs constitutes the test of mathematical intelligence—and computers fail this test—then it may be pointed out that this will also place the majority of humans at par with machine intelligence, because the vast majority of humans do not participate in the exciting activity of mathematical discovery.

Important Branches of Mathematics

Among the important branches of mathematics, number theory, set theory, geometry, and logic are historically very old. The oldest civilizations—the Indian, Greek, Chinese, Egyptian, and Babylonian—had all developed these branches, in one form or other, for general use. This is substantiated by the fact that without a fair understanding of geometry the remarkable architectural and civil-engineering feats for which these civilisations are famous would not have been possible. Even such elementary constructions as a rectangular wall or a field, or the more intricate hemispherical dome, require at least a rudimentary knowledge of geometrical constructions. Incidentally, ancient Greeks gave much importance to geometry, whereas Indians gave up geometry for abstract mathematics during the Buddhist period.

As far as number and set theories are concerned, no one really knows when humans developed these. Numbers surely came with the need for counting. Most civilizations seem to have been formally using numbers right from their inception. It was needed for commerce, and in earlier tribal societies to quantify one's possessions.

Set theory is more fundamental than number theory, for it deals with classification rather than counting. Formal logic was a later development. But its rudiments were probably coeval with the development of language—with the need to coherently and intelligently communicate one's opinions, arguments, and deductions to others. In fact, logic and language are so interlinked that many consider logic to be merely a linguistic construct. Historically, both Nyaya and Aristotelian philosophy had formalized logic for their respective civilizations, the Indian and the Greek.

Number Theory

Let us begin with numbers. We may ask: What is the nature of numbers? Are numbers real? In the

Nyaya and Vaisheshika philosophies, for instance, numbers are real entities, belonging to one of the seven categories of real entities. However, there are conceptual difficulties if we grant numbers an objective reality. Consider the following: We have two books. So, we have books and we have also the number two. Let us add another pair of books to our collection. Does it destroy the number two and create the number four? Or does the number two transform into the number four? Suppose we add two notebooks, to distinguish them from the original pair of books. Then we have got a pair of twos as well as a four. None of the original numbers is destroyed or transformed and yet a new number is created. The ancient Buddhists were therefore not wrong in pointing out that numbers are in fact mental concepts. They do not have any existence outside the mental world.

Furthermore, mathematicians say that numbers can also be thought of as properties of sets, being their sizes (though the Buddhists would not feel comfortable with this either). Numbers as properties of sets were called *cardinal numbers* by George Cantor in contrast to *ordinal numbers* which represented positions in a series (first, second, and so on). Again, these are not to be taken as real properties, for there is an equally long-standing debate on substances and their properties. Essentially, therefore, numbers are abstract properties of equally abstract sets. Or, with greater ingenuity, the abstract concept of set itself can be thought of as representing numbers—not just the properties of sets but the sets themselves. Thus, we may have:

$\{\} = 0$

$\{\phi\} = 1$

$\{\phi, \{\phi\}\} = 2$

$\{\phi, \{\phi\}, \{\phi,\{\phi\}\}\} = 3$, and so forth.

Does anyone find this remarkable example illuminating or fascinating! All the same, this is what we meant by our statement that mathematical entities are not real but are merely conceptual entities.

Historically, the notion of numbers was formalized in the following succession. The notion of *natural numbers* (1, 2, 3, ...) was developed first. 'God created the natural numbers; everything else is man's handiwork', the German mathematician Leopold Kronecker had famously observed. The incorporation of zero as a number was the great contribution of the Indian subcontinent. The natural numbers are complete as far as the operations of addition and multiplication are concerned—if we add or multiply two natural numbers we get another natural number. However, the class of natural numbers is not complete with respect to subtraction (you don't get a natural number if you subtract 3 from 2). So if the result is to belong to the set of numbers, we need to extend the list of natural numbers to include negative numbers. The result is the set of *integers*.

Again, we see that the class of integers is not complete with respect to division. So the set of numbers is further extended to include ratios—*rational numbers*. The word *rational* here is derived from 'ratio' and not 'reason'. Next we get surds or irrational numbers, when we extend the set of numbers to include limits, sums of series, square roots, trigonometric functions, logarithms, exponential functions, and so on. This gives us *real numbers*. Actually, this gives us only a subset of real numbers because these constitute only what are called computable numbers (which can be computed to any desired degree of precision by a finite, terminating algorithm). Not all real numbers can be so constructed. To be mathematically precise, we need to see each real number as a partition which divides the set of numbers into two groups A and B. If the partition is such that there is a largest element of A or a smallest element of B then the (partitioning) number is rational. But if there is neither a largest number in A nor a smallest number in B then the divisive number is irrational. This is the concept of 'cuts' developed by the celebrated mathematician Richard Dedekind.

The other day I was arguing with a friend that every real number can be seen as a decimal expansion which can be computed one digit after another using a suitable algorithm. I was, however, wrong. Alan Turing has proved this mind-boggling truth

that not all real numbers are computable.

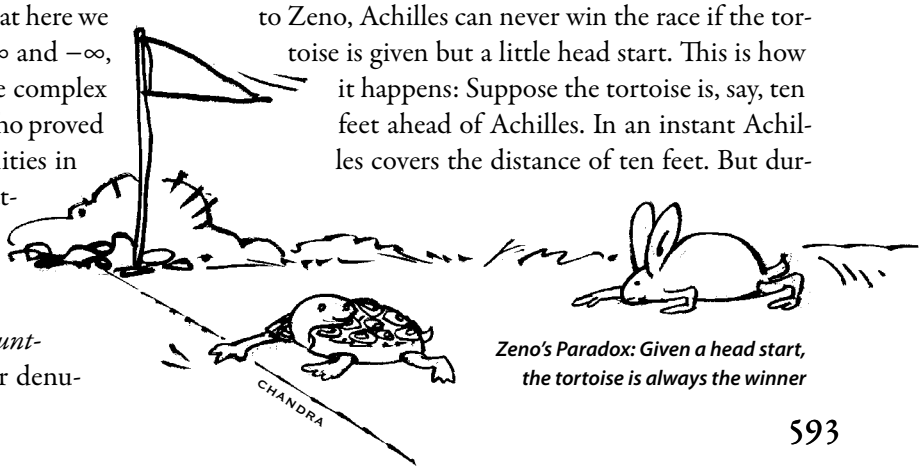
People found out very quickly that negative numbers could not have real square roots. In order to make the set of numbers complete even with the operation of determining square roots, the domain of real numbers was again extended to that of *complex numbers*, which are nothing but the sum of a *real number* and an *imaginary number* (i.e. a number expressed as a multiple of $\sqrt{-1}$). The historical choice of the names *imaginary* and *complex* was, however, unfortunate. For this makes one think that complex numbers are not numbers at all. One could on the other hand look at complex numbers as a dyad such that the subset of this dyad with the second term as zero is actually the set of real numbers. Moreover, all algebraic operations that can be carried out using real numbers can also be applied to the complex number dyads when these are suitably redefined. This interpretation is much more appropriate than the one commonly taught in schools. It is also worth noting that the class of complex numbers is 'complete' in the sense that if we apply any normal operator or any common function to complex numbers we always get a complex number.

With the introduction of complex numbers, one would think that the number system was at peace. But that was not to be, for serious trouble was brewing with the inclusion of the concept of infinity. There is a common misconception that there is one and only one mathematical infinity. And the people who seem to be more prone to this misconception are people from a Vedantic background! I wish to point out that here we are not merely thinking of $+\infty$ and $-\infty$, or even 'radial infinites' in the complex plane. It was George Cantor who proved that there are numerous infinities in relation to numbers. As a matter of fact, while the set of integers and of rational numbers are *countably infinite*, the set of real numbers is *uncountably infinite*. (Countability or denumerability refers to being able to be counted by one-to-one correspondence with the infinite set of all positive integers.) More remarkably, Cantor was able to prove that even uncountably infinite sets have different cardinalities: that if $\aleph_0$ is an infinite set then there exists a set ($\aleph_1$) which can be proved to be larger than this set, and this process can be extended to obtain infinites with still greater *cardinality*. Cantor's treatment of infinities, however, was abstract rather than constructive. And this cost him an appointment at Berlin University—though his work was mathematically sound—as Kronecker, a firm believer in constructions, opposed him. Mathematicians, after all, are also human!

Zeno's Paradox

Besides the problem of infinity, mathematicians working with numbers had also to tackle the problems of limits and series. To appreciate the problem with series, we consider one of Zeno's paradoxes—a set of problems devised by Zeno of Elea to support Parmenides's doctrine that 'all is one'. This doctrine asserts that, contrary to the evidence of our senses, the belief in plurality and change is mistaken, and, in particular, motion is nothing but an illusion. This is much like the Buddhist doctrine of *kṣaṇikavāda*.

'Achilles and the Tortoise' is the most famous of these paradoxes. Fleet-footed Achilles, of Battle-of-Troy fame (in Homer's *Iliad*), and a tortoise are participating in a race. Achilles is reputed to be the fastest runner on earth; and the tortoise is one of the slowest of living beings. However, according to Zeno, Achilles can never win the race if the tortoise is given but a little head start. This is how it happens: Suppose the tortoise is, say, ten feet ahead of Achilles. In an instant Achilles covers the distance of ten feet. But dur-



Zeno's Paradox: Given a head start, the tortoise is always the winner

ing that instant the tortoise has already advanced a short distance. Again in another bound Achilles covers that small distance, but to his dismay, during that time the tortoise has advanced still more, and so on. Thus, Achilles can never possibly catch up with the tortoise.

But this clearly is nonsense. In reality, things never happen like that. This is actually a graphic description of the problem of the sum of an infinite series of decreasing terms which yields a finite value. Of course, not every such series will yield a finite value. The harmonic series (1 + ½ + ⅓ + ¼ + ...) is one such.

Set Theory

Now that we are on paradoxes, let us start our discussion of set theory with Russell's paradox. In set theory, we have finite sets as well as infinite sets. For infinite sets it is possible that a set contains itself. {φ, {φ}, {φ,{φ}}, {φ,{φ},{φ,{φ}}}, ...} is one such set. Keen observers would have noted that this is the number 'infinity' in the 'illuminating' example of a previous section. Now call a set *abnormal* if it contains itself. Define a set *R* of all 'normal' sets: 'the set of all sets that do not contain themselves as members'. Now ask the question: Is *R* normal or abnormal? We see that this question cannot be answered in either the affirmative or the negative.

The 'axiomatic set theory' was developed to address such paradoxes by incorporating an 'axiom of choice' within the theory. But this goes beyond the scope of our discussion, although it may be mentioned in passing that a surprising corollary to this theory is the fact that a *universal set*—the hypothetical set containing all possible elements—does not exist.

In practice, sets are normally related to groups and collections of objects in the external world. Here too, a similar question, as with numbers, arises: are sets real? In Indian philosophical thought too, the same question appears repeatedly. The Buddhists, for instance, argue that the axe which is a combination of the handle and the blade does not exist 'in itself'. It is absurd, they say, to call an axe a family heirloom of great value if its blade is changed *just* five times and its handle *just* fourteen times.

This question of absurdity, however, does not arise in mathematics because sets as well as their constituent members are all hypothetical entities—conceptual objects which are granted no intrinsic reality.

Geometry

In contrast to sets and numbers, it is easy for us to see that geometrical objects are conceptual. But it was not so for the Greeks—they took their geometry seriously exactly for the opposite reason: they thought geometry was real.

Take, for instance, the case of a point and a line in a plane. What is a point? A point, as every schoolchild knows, is a geometrical object that does not have any length or breadth (all its dimensions are zero). And what is a line? A line is a geometrical object that has only length but no breadth. These very definitions make it obvious that true points and lines cannot exist in the real world distinct from our mental constructions.

Credit goes to Euclid for formalizing the field of geometry into a body of axioms and theorems. Though his treatment of the subject was fully conceptual, it took a really long time—two thousand years—for people to see that these concepts do not quite match the real world. All this time everyone had been mistakenly assuming that the world is Euclidean. Geometrical results seemed to fit our experiential world so very nicely that people failed to see that they could be unreal. Nevertheless, with the advent of Einstein's theories of relativity—both special and general—the realization dawned that the world is in fact non-Euclidean; it is more accurately described in terms of several Riemannian (or elliptic) geometries.

Another point to note is that, in formalizing geometry, we try to arrive at proofs which do not appeal to our intuition or visual sense but are logically correct. For though original mathematical insights are often derived through intuition, these 'insights' also run the risk of being proved wrong. Even the

great Euclid—though he was well aware of this and therefore tried very hard to avoid intuitive judgements—himself committed a few mistakes in his proofs, because these proofs relied on the way he drew the illustrations. All the same, this does not take away any of the credit due to him in recognizing what is correct mathematical procedure. And certainly the momentous task of formalizing the great body of geometry already known at his time was not an easy task by any standard.

Logic

Mathematical logic is the final edifice of mathematics. And every logical system has to deal with the question of *completeness* and *consistency*. Completeness means that every true statement must be verifiable, must have a proof. Consistency is slightly different: it means that we should not be able to 'prove' false statements as true, that is, false statements must not have valid proofs in the theory in question.

At the beginning of the twentieth century, David Hilbert posed the ultimate problem of logic to mathematicians—to prove the consistency of mathematics as a system. This challenge came to be fondly called the Hilbert programme. Hilbert observed:

> When we are engaged in investigating the foundations of a science, we must set up a system of axioms which contains an exact and complete description of the relations subsisting between the elementary ideas of that science. The axioms so set up are at the same time the definitions of those elementary ideas; and no statement within the realm of the science whose foundation we are testing is held to be correct unless it can be derived from those axioms by means of a finite number of logical steps. Upon closer consideration the question arises: Whether, in any way, certain statements of single axioms depend upon one another, and whether the axioms may not therefore contain certain parts in common, which must be isolated if one wishes to arrive at a system of axioms that shall be altogether independent of one another.
>
> But above all I wish to designate the following as the most important among the numerous questions which can be asked with regard to axioms: To prove that they are not contradictory, that is, a definite number of logical steps based on them can never lead to contradictory results.

The questions of consistency and completeness are important because if mathematics as a system were both complete and consistent, then it could well yield an easy path to new discoveries by way of a method to automatically discover mathematical theorems, what with superfast computers with super-memory and super processing power as tools.

Kurt Gödel, however, proved that mathematics is in fact incomplete. He further showed that the consistency of mathematics cannot be proven from within the field of mathematics itself, or to be precise, from within Peano's axiomatization of the number theory. So with this dual stroke he delivered a terrible blow to the human quest for 'knowing everything'.

In brief, Gödel's theorems have the following twin consequences: First, there exist true statements which do not have any proof, and second, even if we have a proof for such a statement, we do not also know (by means of a valid proof) that its converse is not true. The wording and formulation of the second part is important as it makes a distinction between the truth of a statement and having a proof thereof.

A question may naturally arise at this juncture: Is Gödel's incompleteness theorem applicable to every logical system? Turing is credited with extending the results of Gödel's theorem to the field of computation. He has shown the non-existence of several kinds of computational procedures that could have helped us circumvent the implications of Gödel's theorem, enabling us to find the truth and falsity of statements in a circuitous way. Thus, he was able to draw our attention to the far-reaching consequences of Gödel's incompleteness theorem. In short, this theorem brings under its purview every kind of logical system—ancient or modern or postmodern—that is powerful enough to deduce facts. It only leaves out trivial theories like those based on first-order predicate calculus (logic).

So it would not be correct to say that Gödel's incompleteness theorem applies only to formal logic or axiomatic mathematics, and not to the Nyaya or Buddhist logical systems, because these systems also involve predicates and possess deductive (*anumāna*) power.

Mathematics, Mind, and Maya

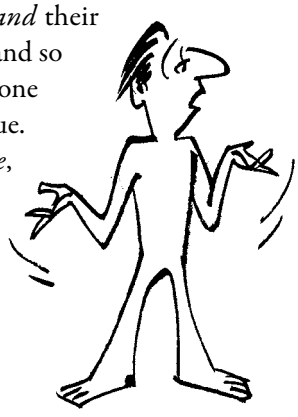
Let me conclude with some personal reflections:

First, mathematics has to constantly fight off utilitarians who accuse it of a lack of concern with reality—at least pure mathematics does not concern itself with applications. In fact, many pure mathematicians think that applied mathematics—being more interested in the results than in the process—is a degradation, and hence no mathematics at all.

It is a mundane fact that less-advanced disciplines further their cause with the assistance of more advanced ones. The latter, however, can keep advancing only by keeping intact their pristine purity. Thus even though others may use mathematics, mathematics stands to lose if it starts catering to the demands of other disciplines: the only way for mathematics to advance is by concentrating on its lofty aims. Thus it should be left to other disciplines to find the applications for and uses of mathematics, so that pure mathematics remains pure.

Second, Gödel was able to prove that there exist true theorems for which there is no proof. Some take this as proof of the superiority of the human intellect—after all, we know indirectly about the truth of these theorems even though they cannot be proved. This is not correct. Gödel only showed that *both* the theorems *and* their converse have no proof, and so if a system is consistent, one of them is bound to be true. Thus we have, *by inference*, a true theorem which does not have a proof. But we do not know specifically which of the two (the theorem or its converse) is true. A further corollary to his theorem is that only inconsistent systems are trivially complete. And our hopes of omniscience are further dampened when we remember that the consistency of a system is impossible to prove from within the system itself.

Third, Vedanta as a system of philosophy is an empirical system. However, the only empirical facts that it sticks to with heart and soul are the reality of Brahman, the unreality of *samsara*, and the oneness of Atman, the individual soul, and Brahman, the supreme Reality. These are empirical truths according to Vedanta because Vedanta firmly holds that Atman, Brahman, and maya are mere statements of facts—a posteriori truths, truths that need to be experienced or realized. However, as the world is granted only a conceptual reality—as a construct of the cosmic mind (*hiranyagarbha*)—Vedanta remains within the purview of empirical sciences only very loosely. Strictly speaking, then, Vedanta as a system with a single composite empirical fact—*brahma satyaṁ jaganmithyā jiva brahmaiva nāparaḥ*; Brahman is real, the world unreal, and the individual soul is no different from Brahman—which is not provable by sensory perceptions, becomes a system independent of physics and mathematics alike. Nevertheless, care should be taken, when we talk (as Vedantists) either about the world that is a product of maya or when we use a deductive process to infer the unity of existence and the unreality of the world, for then there is no escape from the sciences, both empirical and formal—physics and mathematics. Within the realm of maya, Vedanta cannot go against the findings of physics and mathematics.



'Vedanta cannot go against the findings of physics and mathematics!'

'Only in the realm of maya!'

Reminiscences of Sri Ramakrishna

Trailokyanath Dev*

I REMEMBER an event that took place fifty years ago. One afternoon, on a full-moon day, I visited Paramahamsadeva [Sri Ramakrishna] in Dakshineswar. I found him seated in his room, deeply absorbed in spiritual talk with some devotees. As soon as I sat down near the edge of the carpet, Sri Ramakrishna asked me to sit in front of him. He was very affectionate to me, so I sat facing him. The topic of discussion was, 'How one can realize God through sadhana'.

Sri Ramakrishna said: 'If a devotee wholeheartedly practises sadhana, he feels an attraction for God. Again, if that attraction is genuine and deep, God also feels an attraction for the devotee. Thus when both attract each other, the devotee becomes silent. Then the devotee does not make any "*bhan bhan*, *kal kal*", and "*bhak bhak*" sounds.'

I said: 'Sir, I couldn't follow what you just said. Please explain it to us clearly.'

Sri Ramakrishna: 'There are some such devotees in your Brahmo Samaj. Don't you know them?' Then he continued: 'Listen, when a devotee feels drawn to God by the combined force of these three attractions—the chaste wife's love for her husband, the mother's love for her child, and the worldly man's attachment to his wealth—he or she becomes fully absorbed in Him and remains silent.'

I asked him: 'Sir, what do you mean by the "*bhan bhan*, *kal kal*", and "*bhak bhak*" sounds?'

Sri Ramakrishna: 'Look, as long as the bee does not get honey, it makes a "*bhan bhan*" sound; but it becomes silent as soon as it begins to sip honey.

'When one is frying something in oil in a frying pan, it makes a "*kal kal*" noise as long as it is uncooked; but it does not make any noise when it is fully fried.

'The women in villages carry their pitchers on their hips to fetch water. When they put their empty pitchers under water, one hears a "*bhak bhak*" sound, but there is no sound as soon as the pitchers are full.

'This happens to the devotees when they realize God.'

Then I asked: 'Sir, what did you say about the devotees of the Brahmo Samaj?'

Sri Ramakrishna said: 'You see, Devendra Nath Tagore lives in the midst of immense wealth, but he has kept himself detached like a lotus leaf in water. He remains silent, holding Brahman in his heart through sadhana. Keshab Sen, Vijay Goswami, Aghore Gupta, and some other devotees have also done likewise. Shivanath Shastri is now passing through a difficult situation, but eventually he will be quiet.' He was very fond of Shivanath Shastri. Sri Ramakrishna had such divine power that when he saw a man's face he could easily determine whether that person was a devotee or not. He knew the devotees of the Brahmo Samaj very well, so he could talk about them like that.

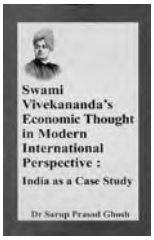
The Paramhansa of Dukhinessur, to whose hermitage we paid a visit on the occasion of the moonlight festival, completely lost his senses when he heard the procession chant the name of God before him. This is what we call being intoxicated or maddened by communion with God. The very sight of a man showing his love to Hari renders him literally insensible with joy. The sight we saw there is worth seeing by all means.

—*The Sunday Mirror*, 2 November 1879

* Trailokyanath Dev was a member of the Brahmo Samaj and a faithful devotee of Keshab Chandra Sen. He authored the Bengali book *Atiter Brahmo Samaj*, from which this reminiscence has been taken.

REVIEWS

For review in PRABUDDHA BHARATA,
publishers need to send ***two*** *copies of their latest publications.*



Swami Vivekananda's Economic Thought in Modern International Perspective: India as a Case Study

Dr Sarup Prasad Ghosh

The Ramakrishna Mission Institute of Culture, Gol Park, Kolkata 700 029. E-mail: *rmic@vsnl.com*. 2006. xxxv + 618 pp. Rs 200.

The idea of India is central to a larger understanding of our nation and the task of rebuilding it. In the last two centuries, leaders of our public life and society have reflected upon and spoken on various aspects of this issue. It is appropriate and welcome that the academic community take up these ideas, both in their historical and contemporary settings, for assessment and evaluation. The book under review belongs to this line of enquiry.

The decline and stagnation of India and the intellectual ferment in the Bengal of his times provide the background and context for Swami Vivekananda's call to the nation. India's resurgence as a nation was a vision then. In delineating this national discourse as well as the larger development question, the author focuses on such themes as the decline of the Indian economy in the British period and the importance of agriculture, industrialization, and global trade, keeping Swamiji's views as the frame of reference. Dr Ghosh has addressed almost all the relevant issues and arguments in presenting the ground situation. One is tempted to observe, however, that the idiom, phraseology, and definitions—leave alone the analysis—read very much Marxian. Similarly, the tenets of liberalism have been relied upon to evaluate Indian society. In all these, the connection between the mainstream arguments and the insights and observations of Swami Vivekananda remains tenuous.

Communism is the ultimate wisdom for Marxists; global capitalism is the 'end of history' for liberal free-market intellectuals. Swamiji himself was well acquainted with the philosophical and intellectual traditions of the world. He had toured and observed India closely, and had seen the West as well. His intellectual and emotional turmoil is understandable. One ought to see and place Swamiji's wisdom within the domain of *sanatana dharma* rather than bracket him with intellectual traditions that are essentially alien and transitory.

Of late one sees a power shift; the world is migrating from Europe to Asia. The reemergence of India along with China and Japan as the centre of the world is being talked about. Globalization has delivered this unintended result. To regain true leadership, however, India should lead the world in terms of her classical thought and ideas. In creating our own world, it is as necessary to examine the ideas and principles that gave rise to modern institutions and structures as to translate our own ideas into institution-building and creating a world of our own. One should look forward to Dr Sarup Prasad Ghosh; he has the necessary inspiration to take up such a task.

Prof. V Varadharajan
Former Professor of Economics
Vivekananda College, Chennai

Vedanta and Its Philosophical Development

A Ramamurty

D K Printworld, 'Sri Kunj', F-52 Bali Nagar, New Delhi 110 015. E-mail: *dkprint world@vsnl.net*. 2006. viii + 151 pp. Rs 280.

This is another of Prof. A Ramamurty's books in the series on Contemporary Researches in Hindu Philosophy and Religion. At the very outset, the author mentions that 'among the systems of Indian philosophy, it is the Vedanta which has a history of continuous philosophic development'. The purpose of this monograph is to delineate this continuity against the background of history and to trace its thematic development. A lay reader often gets confused by the apparent contradictions in the various Upanishadic texts. The first and foremost task in developing this philosophy was, therefore, to reconcile and har-

monize the mutually conflicting Upanishadic statements. The Upanishads express different views on such fundamental entities as Brahman, Atman, and the phenomenal world. And this led to various religious interpretations in the course of history. While Acharya Shankara explained the Upanishads in terms of the logic inherent in them, there have been sectarian religious leaders who attempted to interpret the Upanishads to support their sectarian views.

The present work traces the evolution of Upanishadic thought objectively and gives a clear picture of its development throughout the centuries. The introduction sets the reader on his journey with an overview of the book. This is followed by a detailed chapter on the Upanishads. Here the author makes it clear that the Upanishads not only form a part of the Veda but also depend upon it for their meaning and authority. The Vedic Samhitas represent the gropings of the human mind amidst the mysteries of nature, while in the Upanishads the same mind seems to have attained a level of mature understanding. The author goes on to describe the Vedic ontology or world view. The immanence of the divine—an underlying unity in nature—is the world view of the Upanishads. An appraisal of this world view is necessary in understanding the development of Upanishadic thought as propounded by the succeeding savants of Vedanta.

In the chapter on Badarayana, the author analyses the *Brahma Sutra* in the light of this Upanishadic world view. In subsequent chapters he elaborately summarizes the historical development of Upanishadic thought as seen in the works of Acharya Shankara, Abhinavagupta (Kashmir Shaivism), Ramanujacharya (Vishishtadvaita), and Sri Aurobindo.

The author could have included a chapter on Swami Vivekananda and his practical Vedanta. This would have made his monograph more comprehensive and historically accurate. He does, however, refer to Swami Vivekananda in the chapter on Aurobindo and says, 'While Vivekananda tried to understand the practical significance of Vedānta to modern man, or its meaning to everyday life of man, Sri Aurobindo tried to make Vedānta meaningful to modern or scientific understanding of man' (121). The author is of the opinion that Aurobindo's evolutionary approach to Vedanta, or his attempt to adopt the scientific theory of evolution in understanding the basic problems in Vedanta, helped him in making Vedanta intelligible to modern man.

Every chapter of the book throws light on the nuances of Vedanta. The author is a seasoned academician and has left no flaw in presenting the history of Vedantic thought—the mainstay of Indian religious philosophy—to the inquisitive modern reader. The publishers deserve commendation for this beautiful monograph in a simple yet artistic design. It will surely enrich public and private collections.

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Pilgrimage into the Poem Divine: A Study of Bhagavad Gita

N Hariharan

'Shankara Krupa', 54 LIC Colony, Meenambalpuram, Madurai 625 002. E-mail: *vedantin35@rediffmail.com*. 2006. 166 pp. Rs 50.

One more commentary on the Gita is most welcome if only to prove that Krishna and his message can never be exhausted. On the face of it, Sri Hariharan's meaningful contribution lies in giving striking sub-headings to each chapter to rivet the reader's attention. Phrases like 'Detach and Divinise', 'Vision Cathartic', 'Decisive Dichotomy', and 'Mystique of the Most-High' goad us to sit up straight and concentrate on the narration. As the author attempts to clarify the thought processes encapsulated in the poem in the simple and straightforward language of a classroom teacher, he comes across as a reliable guide to the common reader.

Here is his presentation of Karma, Jnana, and Bhakti yoga: 'The Gita Mother cooks three varieties of delicious and nourishing fare out of the raw material of Vedantic wisdom and serves them to her teeming millions of children. Taking into account their innate taste, inclination and digestive capacity, the children can enjoy the fare heartily and draw spiritual sustenance' (2). The same may be said of Sri Hariharan's brew as well. Though he does draw from the commentary of Acharya Shankara and Sri Aurobindo's *Essays on the Gita*, the reading is never heavy. Individual chapters from the source book are taken up for brief introduction. So we begin with Arjuna's sorrow, which is seen as the 'mire of melancholy' from which rises the 'lotus of lofty wisdom' that is the Gita. 'Defang the serpent of Karma!' thunders the narrator, emphasizing the need to divest ourselves of selfish motives and desires when engaged in work. Nay, more, karma should be subli-

mated by knowledge.

Bhakti yoga takes Sri Hariharan to the preferred path of *saguna* worship from where he moves to 'the austere region of Pure Wisdom'. Knowledge here is not dry polemics but a passion for experiencing the Truth, the Brahman, which, of course, cannot be verbalized. Such is Acharya Shankara's view: 'It being non-dual, non-objective and spiritual, it is appropriate that all words should fail to describe it (Brahman)'. So what is this world we see and experience? The author has appended the appropriate parable of three robbers narrated by Sri Ramakrishna to describe the Absolute. And our doubts are laid to rest.

But the philosophical argumentation is not what goes with us as we close this imaginatively planned commentary. It is the decisive statement of Sri Krishna showing the *abhaya hasta* to Arjuna, the representative of humankind: '*ma shuchah*, do not fear'. The feeling that the *Pilgrimage into the Poem Divine* is as much for young students as for retired officers is silently conveyed by the smiling little Krishna of Thanjavur style on the back cover. 'Man is what faith makes of him,' writes Sri Hariharan, and our faith in Krishna will be the angel of the way in our life's journey.

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Loving God
Baba Virsa Singh

Sterling Publishers, A 59 Okhla Industrial Area, Phase II, New Delhi 110 020. E-mail: *sterlingpublishers@airtelbroadband.in*. 2006. 88 pp. Rs 75.

Just as light cannot be hidden within a closed space—somehow or other it spreads everywhere—just as the sweet fragrance of a flower reaches friend and foe alike, so is the true love of God that rises in the human heart: it does not remain there in ice-bound isolation; it flows out in all directions. Baba Virsa Singh's practical teachings give us a sense of wonder—how could we forget our beloved Father, our dearest Friend, our eternal Companion, who is always waiting for us in the innermost chamber of our hearts? The whole of His creation is singing His glory. Baba's teachings are simple; free from egoistic assertions, they come straight from his own realization and are aimed at a coming world culture where hatred and jealousy will be feelings forgotten or remembered as faint shadows of a distant past. Moreover, his words bear a poetic cadence. 'There is so much love in God that all the rivers—the whole universe—can be filled with it.' As one finishes this booklet, one feels as if one has just completed a pilgrimage.

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Channelling Youth Power
A *Vedanta Kesari* Presentation

Ramakrishna Math, Mylapore, Chennai 600 004. E-mail: *srkmath@vsnl.com*. 2006. vi + 241 pp. Rs 45.

Channelling Youth Power first appeared as a special issue of the Vedanta Kesari in December 2005. Twenty-four authors share their thoughts about youth and their advice for young people in twenty-three articles. Among the authors we find eleven monks of past and present, one nun, five educators (professors, lecturers, principals, etc.), two scholars, two leaders in youth-oriented service organizations, one young college teacher, one young film maker, and one 'youth'; twenty are men, four, women. The book is subtitled 'Facets of Youth Power and How to Harness its Potential'; the articles address such topics as brahmacharya, emotional stability, self-management, the spiritual quest, questions of the youth, overcoming negativity, and the mass media from a generally practical standpoint. It is curious that in a book devoted entirely to youth, only three contributors actually fall into that category; is it an indication that our youth are still some way from the creative self-assertion that is the hallmark of a youthful culture? The *Vedanta Kesari* is surely one important forum that they could put to use with salutary results. Are our youth listening?

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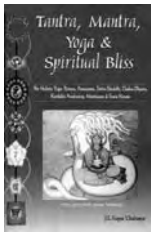

Tantra, Mantra, Yoga & Spiritual Bliss
J L Gupta 'Chaitanya'

Penman Publishers, 7308, Prem Nagar, Shakti Nagar, Delhi 110 007. E-mail: *penmanbooks@yahoo.co.in*. 2007. xvi + 446 pp. Rs 750.

An overview of holistic yoga, including posture, pranayama, *tattva-shuddhi*, *chakra-dhyana*, kundalini yoga, mantra yoga, and *svara-vijnana*.

REPORTS

Sri Ramakrishna Universal Temple, Homer Glen (a suburb of Chicago); inset, consecration homa

News from Belur Math

Srimat Swami Gahananandaji Maharaj, President, Ramakrishna Math and Ramakrishna Mission, inaugurated a two-storeyed extension to the charitable dispensary at Belur Math on 5 August 2007. The dispensary was begun on a small scale in 1913, with free allopathic and homeopathic sections, and started functioning in its own building in 1938. At present, the allopathic section has departments in general and dental medicine, ophthamology, ENT, dermatology, gynaecology, radiology, pathology, and biochemistry. More than 700,000 cases are treated every year.

New Math Centre

A branch of the Ramakrishna Math has been started at Bagda, Purulia, on a 6.8-acre plot of land which had been donated to Swami Brahmananda, the first president of the Ramakrishna Math and Ramakrishna Mission, in 1920. **Ramakrishna Math**, **Bagda**, can be contacted through **Ramakrishna Mission Vidyapith**, **Purulia**.

Universal Temple, Chicago

The Sri Ramakrishna Universal Temple being built by the **Vivekananda Vedanta Society**, **Chicago**, was consecrated on 1 July in an elaborate ceremony. The temple currently includes a shrine and chapel, monastic residence, bookstore and offices, kitchen and dining hall, and parking lot. Future plans include a large dome for the temple and a larger dining hall.

Vivekananda University Completes 2 Years

Ramakrishna Mission Vivekananda University, **Belur**, celebrated the second anniversary of its founding on 4 July at its Narendrapur faculty centre. Prof. Moolchand Sharma, Vice Chairperson, University Grants Commission, New Delhi, was the chief guest. Srimat Swami Smarananandaji Maharaj, Vice President, Ramakrishna Math and Ramakrishna Mission, inaugurated the university's website, *www.rkmvu.ac.in*, and Swami Prabhanandaji, general secretary of the twin organizations, presided over the function.

Ramakrishna Vijayam *Tops One Lakh*

Special issue of* Ramakrishna Vijayam *celebrating 100,000 subscribers

Ramakrishna Vijayam, the Tamil-language monthly of the Ramakrishna Order published from **Ramakrishna Math**, **Chennai**, since 1921, has crossed one-hundred-thousand copies per month circulation. On 22 July, the math held a function on the vast ground adjacent to Vivekanandar Illam to commemorate this achievement. Nearly 10,000 students, devotees, and supporters participated in the function, and many distinguished personalities of Tamil Nadu addressed the gathering. Three volumes containing select articles compiled from previous issues of the magazine were released.

News from Branch Centres

Ramakrishna Math, **Puri**, conducted a medical camp from 19 to 24 July on the sacred occasion of Ratha Yatra, at which 2,228 persons were treated. The ashrama also served sherbet to 20,000 pilgrims.

Srimat Swami Smarananandaji Maharaj inaugurated the newly built higher secondary block of the



Bihar flood relief: delivering supplies, awaiting relief, flooded road (from left)

school at **Ramakrishna Mission Ashrama**, **Katihar**, on 4 August, and presided over a public function held on the occasion.

On 25 August, Srimat Swami Atmasthanandaji Maharaj, Vice President, Ramakrishna Math and Ramakrishna Mission, unveiled a fibreglass statue of Sri Sarada Devi installed by **Ramakrishna Math**, **Baghbazar**, at the nearby *Mayer Ghat*, in place of the old relief which had been installed by the math earlier. He also presided over the meeting held on this occasion, in which Justice Sri Shyamal Sen, former Chairman of Human Rights Commission, West Bengal, and some other dignitaries spoke.

Ramakrishna Ashrama, **Rajkot**, conducted a summer camp from 7 to 31 May for children 7–13 years old, in which 105 children took part. The programme included yoga exercises, chanting, bhajans, moral lessons, and crafts.

Sri S K Singh, Governor of Arunachal Pradesh, inaugurated the newly constructed buildings for a students' dormitory and 10-bed hospital for hostel students at **Ramakrishna Mission**, **Aalo** (formerly Along) on 1 July.

Flood Relief

Recent devastating floods in several parts of Assam, Bihar, Karnataka, West Bengal, and Bangladesh called forth immediate relief efforts in affected areas by centres of the Ramakrishna Math and Ramakrishna Mission. **Ramakrishna Ashrama**, **Rajkot**, continued its relief operations among flood-affected people in Gujarat. Details of relief materials distributed during August 2007 are given below.

Assam · **Guwahati**: 45 litres phenol, 100 kg bleaching powder, 90,000 halogen tablets, and 200 mosquito nets to 675 families of 19 villages in Kamrup district; and medical treatment to 1,050 persons. **Narottam Nagar**: 200 umbrellas and 200 mosquito nets to 200 families of Moolang Gaon, Lido, Tinsukia.

Bihar · **Chapra**: 870 kg rice to 87 flood-affected families of Mushahar Toli (Lalbazar), Maharajganj block, Chapra district. **Patna**: Cooked food to 4,000 persons for ten days, and 47,500 kg chira, 9,500 kg gur, 19,000 candles, 19,000 matchboxes, and 950,000 halogen tablets to 9,500 families belonging to 186 villages of 6 blocks in Darbhanga, Muzaffarpur, and Samastipur districts. **Muzaffarpur**: 23,000 kg chira, 2,626 kg gur, 11,280 candles, 2,480 matchboxes, and 224,800 halogen tablets to 6,977 families belonging to 41 villages of Aurai, Kanti, Katra, Gayaghat, Minapur, and Moshahari blocks of Muzaffarpur district.

Gujarat · **Rajkot**: 20,418 food packets, 1,048 family kits (containing 3 kg khichri, 5 kg wheat flour, 1 kg sugar, 200 gm tea powder, 300 gm spices, and 1 matchbox), 900 kg vegetables, 1,000 kg edible oil, 125 steel utensil sets (containing a glass, a plate, a spoon and two bowls), 125 chadars, and 1,000 tarpaulins to 25,658 persons in the slums and outskirts of Rajkot city and in 8 villages of Rajkot district.

Karnataka · **Ponnampet**: 600 blankets and 300 shawls to 656 families of 21 villages in Kodagu district.

West Bengal · **Cooch Behar**: 3,507 kg rice, 1,261 kg dal, 948 kg chira, 45 kg *batasa*, 30 kg sugar, and 250,000 halogen tablets to 1,895 persons belonging to 4 villages of Mathabhanga and Tufanganj subdivisions in Cooch Behar district.

Bangladesh · **Faridpur**: 1,500 kg chira and 250 kg sugar to 500 families of Faridpur.

Distress Relief

Ramakrishna Mission, **Narottam Nagar**, distributed 500 mosquito nets and 220 school uniforms to people of nearby areas. **Ramakrishna Math**, **Nattarampalli**, distributed 1,154 sets of school uniform cloth and various stationery items to poor students of nearby schools. PB